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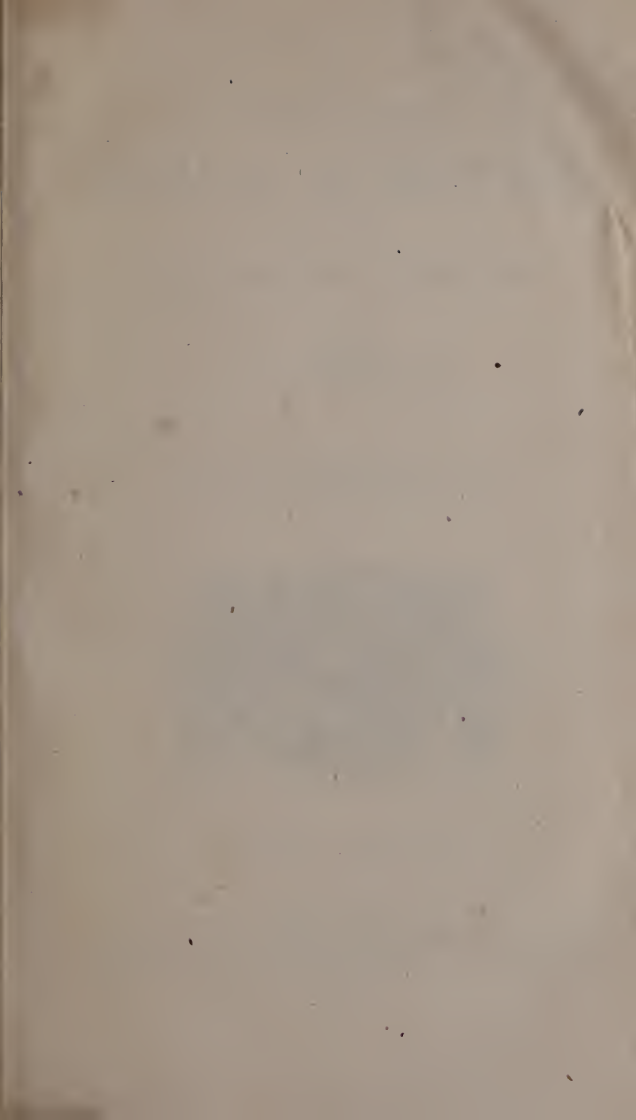
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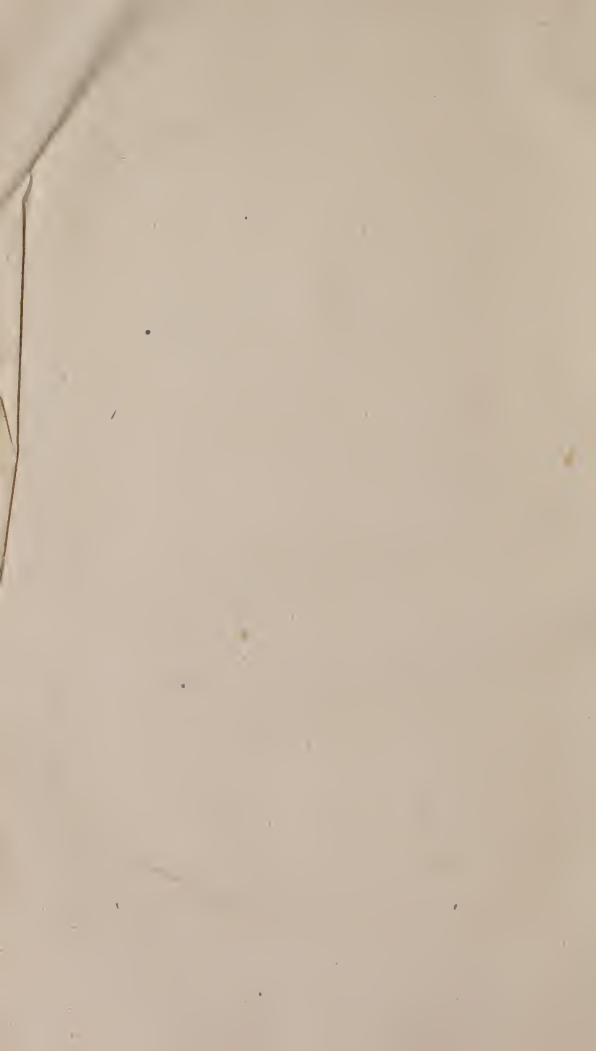
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THE
NEW-YORK
JOURNAL OF MEDICINE,
AND THE
COLLATERAL SCIENCES.

EDITED BY
S. S. PURPLE, M. D.

Verumque est, ad ipsam enrandi rationem nihil plus conferre,
quam experientiam.—CELSUS.



VOL. IX. . . . NEW SERIES.

NEW-YORK :
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1852.

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TO READERS AND CORRESPONDENTS.

 The title-page which accompanies this number, is intended as a substitute for the one issued in our last, which being incorrect, may be cancelled.

The following works have been received :

The Principles of Surgery. By JAMES MILLER, F. R. S. E., F. R. C. S. E., Author of a Treatise on the Practice of Surgery ; Professor of Surgery in the University of Edinburgh, etc., etc. Third American, from the second and enlarged Edinburgh edition. Illustrated by two hundred and forty engravings. Revised with additions. By F. W. SARGENT, M. D. : Author of "Minor Surgery," etc., etc. Philadelphia : Blanchard & Lea, 1852, 8vo., pp. 751. (From the Publishers.)

A Treatise on the Practice of Medicine. By GEORGE B. WOOD, M. D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania ; President of the College of Physicians of Philadelphia ; One of the Physicians of the Pennsylvania Hospital, etc., etc. Third edition, in two volumes. Philadelphia : Lippincott, Grambo & Co., 1852, 8vo., pp. 847-853. (From the Publishers.)

The History, Diagnosis, and Treatment of the Fevers of the United States. By ELISHA BARTLETT, M. D., Professor of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons of the University of the State of New-York ; Member of the American Academy of Arts and Sciences, etc., etc. Third edition, revised. Philadelphia : Blanchard & Lea, 1852, 8vo., pp. 595. (From the Publishers.)

Obstetrics ; the Science and the Art. By CHARLES D. MEIGS, M. D., Professor of Midwifery and the Diseases of Women and Children in Jefferson College, Philadelphia ; lately one of the Physicians of the Lying-in Department of the Pennsylvania Hospital ; Vice-President of the Philadelphia College of Physicians, etc., etc. Second edition, revised. With one hundred and thirty-one illustrations. Philadelphia : Blanchard & Lea, 1852, 8vo., pp. 759. (From the Publishers.)

Remarks on the Plea of Insanity, and on the Management of Criminal Lunatics. By WILLIAM WOOD, M. D., Licentiate of the Royal College of Physicians, and Medical Officer of Bethlem Hospital. Second edition. London : Longman Brown, Green and Longmans, 1852, 8vo., pp. 94. (From the Author.)

On the Surgical Treatment of Polypi of the Larynx, and Œdema of the Glottis. By HORACE GREEN, A. M., M. D., President of the Faculty, and Professor of the Theory and Practice of Medicine in the New-York Medical College, etc., etc. New-York : G. P. Putnam, 1852, 8vo., pp. 121. (From the Publisher.)

Lectures on Histology; delivered at the Royal College of Surgeons, England, in the Session of 1850-1. *Elementary Tissues of Plants and Animals.* By JOHN QUEKETT, Assistant Conservator of the Museum of the Royal College of Surgeons of England. Illustrated by one hundred and fifty-nine wood-cuts. London and New-York: H. Bailliere, 1852, 8vo., pp. 215. (From the Publisher.)

Examination of Drugs, Medicines, Chemicals, etc., as to their Purity and Adulterations. By C. H. PEIRCE, M. D., Examiner of Medicines, &c., for the Port of Boston. Cambridge: John Bartlett. New-York: H. Bailliere, 1852, 12mo., pp. 264. (From the Publisher.)

The Philosophy of Living. By HERBERT MAYO, M. D., Formerly Senior Surgeon to the Middlesex Hospital, and one of the Professors of Anatomy and Surgery to the Royal College of Surgeons, etc. etc. From the third London edition. Philadelphia: Lindsay and Blakiston, 1852, 12mo., pp. 277. (From the Publishers.)

☞ *This is a sensible and well written volume; it abounds in anecdote, and is admirably adapted for popular reading and general usefulness.*

God in Disease, or the Manifestation of Design in Morbid Phenomena. By JOHN F. DUNCAN, M. D., Physician to Sir P. Dun's Hospital, Dublin. Philadelphia: Lindsay and Blakiston, 1852, 12mo., pp. 232. (From the Publishers.)

☞ *This startling title introduces the reader to one of the most remarkable little volumes that has fallen to our privilege to read this many a day. No zealous and high-minded or honorable physician should fail to peruse it.*

Report of the Eastern Lunatic Asylum, in the City of Williamsburgh, Virginia, 1851. Richmond, Va., 1852, 8vo., pp. 36. (From Dr. Galt.)

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia, from January 20th to April 6th, 1852 inclusive. Philadelphia: Lipincott, Grambo & Co., 1852, 8vo. pp. 48. (From the Publishers.)

Tableaux, Geographical, Commercial, Geological and Sanitary, of New Orleans. By BENNETT DOWLER, M. D., Member of the Academy of Natural Sciences of Philadelphia. New Orleans, 1852, 8vo., pp. 40. (From the Author.)

The following Journals have been received in exchange:

The American Journal of the Medical Sciences; edited by ISAAC HAYS, M. D.; for April. (Quarterly. Philadelphia.)

The American Journal of Insanity; edited by the officers of the N. Y. State Lunatic Asylum; for April. (Quarterly. Utica.)

The American Journal of Pharmacy; edited by JOSEPH PARISH, M. D., and WM. PROCTOR, M. D.; for April. (Quarterly. Philadelphia.)

The New Jersey Medical Reporter and Transactions of the New Jersey Medical Society; edited by JOSEPH PARISH, M. D.; for May and June. (Monthly. Burlington.)

The Medical Examiner and Record of Medical Science; edited by F. G. SMITH, M. D., and JOHN B. BIDDLE, M. D.; for May and June. (Monthly. Philadelphia.)

The Charleston Medical Journal and Review; edited by D. J. CAIN, M. D., and F. P. PORCHER, M. D.; for May. (Bi-monthly. Charleston.)

The New-Orleans Medical and Surgical Journal, devoted to Medicine and the Collateral Sciences; edited by A. HESTER, M. D.; for May. (Bi-monthly. New-Orleans.)

Southern Medical and Surgical Journal; edited by L. A. DUGAS, M. D.; for May and June. (Monthly. Augusta.)

Buffalo Medical Journal and Monthly Review of Medical and Surgical Science; edited by AUSTIN FLINT, M. D.; for May and June. (Monthly. Buffalo.)

The North-Western Medical and Surgical Journal; edited by W. B. HERRICK, M. D., and H. A. JOHNSON, M. D.; for May and June. (Monthly. Chicago and Indianapolis.)

Transylvania Medical Journal; edited by ETHELBERT DUDLEY, M. D.; for May and June. (Semi-monthly. Lexington.)

The Western Lancet and Hospital Reporter; edited by L. LAWSON, M. D., and GEORGE MENDENHALL, M. D.; for May and June. (Monthly. Cincinnati.)

New-York Medical Times; edited by J. G. ADAMS, M. D.; for May and June. (Monthly. New-York.)

The New-York Medical Gazette; edited by D. M. REESE, M. D.; for May and June. (Semi-monthly. New-York.)

The Boston Medical and Surgical Journal; edited by J. V. C. SMITH, M. D.; May and June numbers received. (Weekly. Boston.)

The Western Journal of Medicine and Surgery; edited by L. P. YANDELL, M. D., and T. S. BELL, M. D.; for May and June. (Monthly. Louisville.)

The Ohio Medical and Surgical Journal; edited by RICHARD L. HOWARD, M. D.; for May. (Bi-monthly. Columbus.)

The Stethoscope and Virginia Medical Gazette; edited by P. CLAIBORNE GOOCH, M. D.; for May and June. (Monthly. Richmond, Va.)

Nashville Journal of Medicine and Surgery; edited by W. K. BOWLING, M. D., and PAUL F. EVE, M. D.; for May and June. (Bi-monthly. Nashville, Tenn.)

The New-Orleans Monthly Medical Register; edited by A. FORSTER AXSON, M. D.; for May and June. (Monthly. N. O.)

Nelson's Northern Lancet and American Journal of Medical Jurisprudence; edited by HORACE NELSON, M. D.; for May and June. (Monthly. Plattsburgh, N. Y.)

The New-Hampshire Journal of Medicine; edited by EDWARD H. PARKER, A. M., M. D.; for May and June. (Monthly. Concord, N. H.)

New-York Journal of Pharmacy; edited by BENJAMIN W. MCCREADY, M. D.; for January, February, March, April, May. (Monthly. New-York.)

The Western Medico-Chirurgical Journal; edited by J. F. SANFORD, M. D., and SAMUEL G. AMOR, M. D.; no numbers received since November last. (Monthly. Keokuk, Iowa.)

New-Yorker Medicinische Monatsschrift. Herausgegeben und Redigirt von Dr. J. HERZKA, Dr. E. KRACKOWIZER und W. ROTH in New York; for April and May. (Monthly. New-York.)

The East Tennessee Record of Medicine and Surgery, edited by FRANK A. RAMSEY, M. D., for April. (Quarterly. Knoxville, Tenn.)

The Journal of Psychological Medicine and Mental Pathology; edited by FORBES WINSLOW, M. D.; for April. (Quarterly. London.)

Dublin Quarterly Journal of Medical Science; edited by ———; for May. (Quarterly. Dublin, Ireland.)

Dublin Medical Press; edited by ———; for April and May. (Weekly. Dublin.)

Canada Medical Journal; edited by R. L. McDONALD, M. D., and A. H. DAVID, M. D.; for May and June. (Monthly. Montreal.)

The Upper Canada Journal of Medical, Surgical, and Physical Science; edited by ———; for April and May. (Monthly. Toronto.)

London Journal of Medicine; a Monthly Record of the Medical Sciences; edited by ———; for May and June. (Monthly. London.)

Monthly Journal of Medical Science; edited by WM. ROBERTSON, M. D.; for May and June. (Monthly. Edinburgh.)

The British and Foreign Medico-Chirurgical Review for April. (Quarterly. New-York Edition.)

☞ Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to Dr. Purple, editor of the *New-York Journal of Medicine*, 45 Wall-street, *New-York*. Persons at a distance may direct parcels, *paid*, as above, under cover, to M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*; or Delf & Trübner, 12 Paternoster Row, *London*; or Lindsay & Blakiston, *Philadelphia*; or Wm. B. Ticknor & Co., *Boston*. The attention of Correspondents is respectfully requested to the above, as the publishers are frequently subjected to unnecessary expense for postage and carriage.

All remittances of money and letters on the *business* of the Journal, should be directed to the publishers.

The advertising sheet belongs to the business department of the Journal, and all communications for it should be addressed to the publishers, under whose exclusive control it is.

CONTENTS.—NO. I.

(NEW SERIES.)

PART I.—ORIGINAL COMMUNICATIONS.

- ART. I.—Cases of Maculated Typhus or Ship Fever, with suggestions of Treatment; being the result of a series of observations, made during the prevalence of this disease at South Boston and Deer Island Hospitals, in 1847-48. [With Plates.] By J. B. UPHAM, M. D., of Boston, - - - 9
- ART. II.—On Suppurative Inflammation of the Knee Joint; with Cases and Remarks. By JOHN O. STONE, M. D., one of the Surgeons to Bellevue Hospital, - - - 40
- ART. III.—Medical Notes and Observations. By an EX-HOUSE SURGEON. No. I. - - - 51
- ART. IV.—Membranous Croup successfully treated by Tracheotomy. By DANIEL AYRES, M. D., one of the Surgeons to the Brooklyn City Hospital, - - - 69
- ART. V.—Lemon Juice in Acute Rheumatism. By T. D. LEE, M. D., of New-York, - - - 76
- ART. VI.—Upon the Diseases of the Isthmus of Panama. By JOHN A. LIDELL, M. D., of New-York, - - - 78

- ART. VII.—Cases in Surgery. Spontaneous Fractures, and Injuries of the Bladder. By W. PARKER, M. D., Professor of Surgery in the College of Physicians and Surgeons, New York. Reported by STEPHEN SMITH, M. D., - - - 95
- ART. VIII.—Memoir on Nicotine, by M. ORFILA. Translated by CHAS. A. LEE, M. D., - - - - - 112

PART II.—CRITICAL ANALYSIS.

- ART. IX.—A Treatise on the Diseases of the Chest; being a course of Lectures delivered at the New-York Hospital. By JOHN A. SWETT, M. D., Physician to the New-York Hospital; Member of the New-York Pathological Society. New-York: Appleton & Co. 8vo., pp. 590, - - - 125
- ART. X.—A Treatise on the Practice of Medicine, by GEORGE B. WOOD, M. D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania; President of the College of Physicians of Philadelphia; One of the Physicians of the Pennsylvania Hospital, etc., etc. Third edition, in two volumes; Philadelphia: Lippincott, Grambo & Co. 1852. 8vo. pp. 847-853, - - - - - 142
- ART. XI.—The History, Diagnosis, and Treatment of the Fevers of the United States. By ELISHA BARTLETT, M. D., Professor of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons of the University of the State of New-York; Member of the American Academy of Arts and Sciences, etc., etc. Third edition, revised. Philadelphia: Blanchard & Lea. 1852. 8vo., pp. 595, - 143
- ART. XII.—The Principles of Surgery. By JAMES MILLER, F. R. S. E., F. R. C. S. E. Author of A Treatise on the Practice of Surgery; Professor of Surgery in the University of Edinburgh, etc., etc. Third American from the second and enlarged Edinburgh edition. Illustrated by

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ART. XIII.—Lectures on Histology, delivered at the Royal College of Surgeons of England, in the Session of 1850–51. Elementary Tissues of Plants and Animals. By JOHN QUEKETT, Assistant Conservator of the Museum of the Royal College of Surgeons, England. Illustrated with one hundred and fifty-nine wood-cuts. London and New-York: H. Bailliere. 1852. 8vo. pp. 215, - - - - - 144

ART. XIV.—Obstetrics: the Science and the Art. By CHARLES D. MEIGS, M. D., Professor of Midwifery and the Diseases of Women and Children in Jefferson College, Philadelphia; lately one of the Physicians of the Lying-in Department of the Pennsylvania Hospital; Vice-President of the Philadelphia College of Physicians, etc. etc. Second edition, revised. With one hundred and thirty-one illustrations. Philadelphia: Blanchard & Lea. 1852. 8vo., pp. 759, - - - - - 144

PART III.—AMERICAN MEDICAL RETROSPECT.

Abstract of Proceedings of the American Medical Association at its late Meeting, held at Richmond, Va., May 4, 1852, - 145

Croup.—Compound Tincture of Chloroform as a Remedy. Boston Society for Medical Improvement, - - - - - 150

MISCELLANEA.

Ligation of the Primitive Iliac Artery, - - - - - 151
Removal of a Pessary after forty-one years' residence in the Pelvis 152
New-York Journal of Pharmacy, - - - - - 152

OBITUARY.

Death of John S. Wiley, M. D., U. S. N.,	-	-	-	-	152
Death of Dr. G. L. Spencer,	-	-	-	-	152

MORBID APPEARANCES FOUND IN THE INTESTINES IN THE SECONDARY AFFECTION OF MACULATED TYPHUS

Plate I



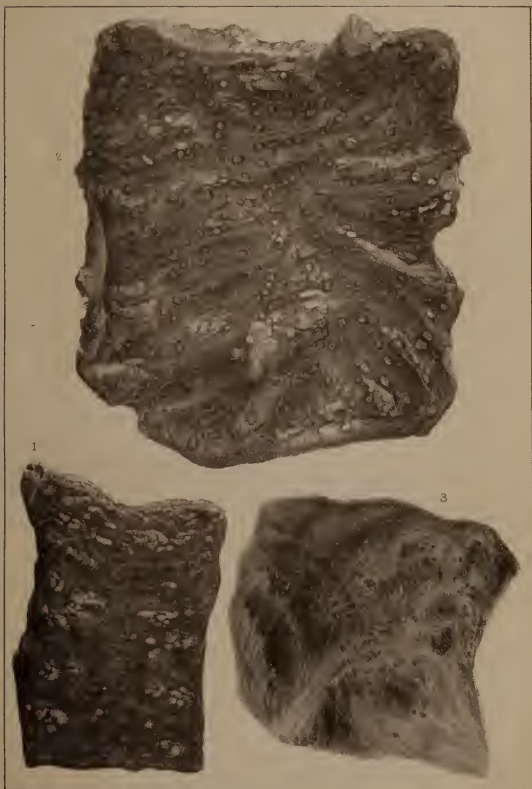
A. Sonnet lith

Printed by Tappan & Bradford

- | | |
|---|--|
| 1 - Inflamed portion of small intestine. | 3 - Portion of Ileum 4 feet from valve |
| 2 - Portion from upper half of Ileum showing the commencement of the Rugee, the mucous membrane has been divided by the scalpel | 4 - Portion of Ileum 3 feet from valve. |
| | 5 - Peyer's patch perfectly normal seen apparently depressed |

COMBINED APPEARANCES FOUND IN THE INTESTINES IN THE SECONDARY AFFECTIO OF MUCULATED ECHINUS.

Plate II



A. Sorel

1.-Portion of Ileum at Ileo Coecal valve
 2.-Cecum, showing the ulcerations of
 the Solitary Glands

3.-Portion from Sigmoid flexure
 of Colon, engorged and thick-
 ened

THE NEW-YORK
JOURNAL OF MEDICINE
FOR JULY 1852.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I.—*Cases of Maculated Typhus or Ship Fever, with Suggestions of Treatment ; being the Result of a Series of Observations, made during the Prevalence of this Disease at South Boston and Deer Island Hospitals, in 1847-48. [With Plates.]* By J. B. UPHAM, M. D., of Boston.

[Continued from Vol. VIII., N. S., p. 328.]

THE cases presented in the last number of the Journal are offered as fair examples of the fever witnessed in the epidemic under consideration. They are a few from a multitude of records made at the bedside, and are given with minuteness and particularity, to afford a faithful *portraiture* of the disease, as manifest under its ordinary phases, in its acute or primary forms. It is not our object to discuss here the nature of the phenomena thus depicted, and we pass on to some considerations of treatment.

The conditions attendant upon the advent of the fever were unfavorable to its management, at first. Coming, as it did, suddenly upon our shores, in the form of an epidemic hitherto

almost unknown to us, it took the whole medical community by surprise, and for some time they were unsettled in opinion as to the nature of the malady, and the best modes of treatment. Especially were these embarrassments felt at the House of Industry, which was never intended as a receptacle for infectious diseases, and where the fever, in large amount, was thrust into wards already filled to their capacity with miscellaneous patients.* Moreover, the medical force allowed at the Alms House department, at all times sufficiently limited, was wholly inadequate to the additional burdens imposed, while the constant demand at the bedside for the exertions of those still remaining fit for duty, left little time for study and investigation elsewhere.

Patients were brought into the hospital directly from the ships, in every stage of the disease, and in all its forms and complications ; but very few were seen, at first, on whom the fever had not become firmly fixed, and their obtuseness and indifference was such, as to preclude all hopes of any rational account of themselves previously. All that could be done was to treat symptoms as they presented, and rely on observation and experience to furnish better means and resources for the future. As might be supposed, the ratio of mortality was at first fearful. But as time permitted the better understanding of the disease—as the influx of patients became more gradual and uniform, and better accommodations for the sick were provided, a plan of treatment was matured and followed with something like satisfactory success.

It was early apparent that here, as in most epidemics occurring among a class of people reduced by want and privations of every kind, pure air, cleanliness, and good nursing, were measures of primary importance. Bland nourishing food and drinks, given frequently in small quantities, were, in most cases, demanded throughout the whole course of the disease. Conjoined with such hygienic measures, the use of mild evacuants—of diaphoretics, nervous and arterial sedatives or stimulants, as the case might require, together with the usual

* The hospital accommodations at Deer Island were not provided till several months afterwards.

means to mitigate the symptoms of fever—was all that constituted the general system of treatment. The details were varied according to the indications determined by the circumstances of the patient, the types and forms assumed by the disease, and the complications which arose during its progress ; so that while the general management of the case might safely be intrusted to the intelligent and faithful nurse, the intervention of the physician was demanded to obviate injury to the vital functions, and guard in turn each important organ on which the fever threatened to fall with its leaden weight.

It was soon manifest that the disease was eminently contagious among those much in communication with the sick. Measures were consequently adopted, with a view to prevent the spread of the disease. The fever patients were separated from the other inmates of the hospital, and placed in shanties erected for their accommodation, at a distance from main building. The ventilation of these temporary structures was easily obtained, and it was found that patients in them fared much better than those in the hospital proper.

Before admission to the wards, each patient, who was in a condition to bear it, was subjected to the process of thorough cleansing by the warm bath, an operation the more salutary to the subject, as the majority of them, according to their own assertions, (which we are inclined to believe,) had never experienced this privilege before. As soon as the fatigue passed off, a grateful sense of relief and mitigation of all the symptoms followed. Add to this the unknown luxury of clean sheets and careful attendance, and the result was a positive improvement in the patient, whatever might be the stage of the disease.

As the epidemic advanced, and the fever began to spread by communication, opportunity was offered to study its course from its first inception, and to adapt our remedial measures to the various stages of its progress. The period of incubation in the subjects of direct contagion, could not be definitely determined. So far as our observation goes, it seemed to observe no fixed law in this respect, but to depend on the virulence or concentration of the poisonous element, whatever it may be, as also upon the power of resistance on the part of the person exposed. From certain premonitions, if carefully attended to,

the recipient of the contagious influence could oftentimes himself determine when his system had become duly charged, and by prompt precautionary measures, still resist its specific impression. These indications are giddiness and a sense of faintness, and peculiar nausea and malaise, occurring suddenly after exposure to cases of peculiar malignity or offensiveness, or long continued subjection to the effluvia and exhalations concentrated in ill ventilated apartments. In such case, immediate resort should be had to a change of clothing, warm bath, pure air, and removal for a time from all associations connected with the disease.* No doubt there are certain conditions, mental and physical, that strongly predispose to the reception of the contagion, and its subsequent development. Irregularity of any of the functions, and fatigue of body and mind, thus act. So after the actual invasion of the disease, nothing is more unfavorable to the result than this previous intellectual and physical exhaustion, especially if there is added the depressing influence of fear. Perhaps to the presence of these conditions we must look for the cause of the greatly increased ratio of mortality among the physicians and medical attendants who become the subjects of the fever. Statistics will show that no epidemic or contagious malady has ever visited our shores, or sprung up amongst us, which has proved so fatal to the ranks of our profession, according to the number exposed. Certain it is that, in this latter class, conjoined to the ordinary loss of nervous vigor, there exists a greater amount of mental anxiety and despondency, resulting from the appreciation of their own case, from which, happily

* The writer can illustrate this in one or two instances in his own case. Once was when called to plug the posterior nares in a patient who was brought into the last stages of the disease, and presented a combination of its most malignant phases. The operation here became necessary to save life; it was accomplished with much difficulty and delay, the inhalation of the foul breath of the patient meanwhile being unavoidable. Here the impression was strong upon the nervous system, and the sensations above described marked and unmistakable; a nurse who was assisting was affected in the same manner, and obliged to desist. This patient died on the following day. An immediate attention, on our part, to the precautions above named, dissipated the symptoms at once.

for themselves, the usual subjects of this disease are in great measure exempt. As before suggested, due attention to ventilation and cleanliness in the wards, the avoidance of crowded rooms for patients, and the instant removal of all forms of filth from about their beds, together with a judicious use of disinfecting agents, did much to lessen the chance of communication.

When the morbid impression has been fairly made upon the system, and the formative stage, as pictured in the preceding cases, had commenced, attempts were made to arrest or cut short its progress. To this end, a powerful emetic was directed, aided by the warm bath, and followed by vigorous friction and sinapisms to various parts. A purgative of oil in aromatic emulsion was added, sufficient to clear the digestive canal. Most reliance was placed on the emetic, which usually consisted of ipecac in doses of 3 ss.; doubtless mustard would prove a good substitute, producing the requisite shock more speedily and perfectly, with less exhaustion to the general system. Should signs of gastric disturbance exist at the outset, the emetic must be omitted, and external derivative and revulsive measures, stimulating pediluvia, a sinapism to the epigastrium and frictions, only employed. How we are thus able to break the associated chain of morbid causes, we are at a loss to say. It is certain that well-marked instances of the invasion of the disease were thus arrested *in limine*. But if the case was not seen till the second or third day, or after reaction had supervened, it must run its course. Usually, in favorable cases, an indistinct crisis was observed at some period between the fourteenth and twenty-first day from its first manifestation. In the majority of fatal cases in the *primary* form, death occurred between the eleventh and seventeenth day.

At first, two distinct types of the fever were noticed, viz., the *exalted* or *dynamic*, characterized by intense excitement of the vascular and nervous systems, and the *depressed* or *adynamic* form, in which, from the outset, there was general depression of the vital functions. This latter form was much more frequent, and fixed the predominant character of the epidemic. Indeed it was rare that the former condition continued throughout the whole course of the disease, general or partial

adynamia being liable at any time to supervene, giving rise to a class of *mixed* cases, which will be alluded to hereafter. Bearing in mind, then, the essential adynamic character of the affection, the general indication was to sustain the vital forces and guard the patient from death by asthenia.

Next, to protect the important vital organs.

Third. Modify existing symptoms, and minister to the relief of the sufferer.

Attention to the diet was an important consideration. The bland articles of nutriment—as arrow-root, sago, ground rice, panado, carefully prepared—were allowed during most of the acute stage, to which was occasionally added the lighter animal jellies, and, when prostration was marked, beef tea, and chicken and mutton broths, but always directed to be given in small quantities, at frequent intervals, and their effect watched. Demulcent beverages constituted the principal drink of the patient. The appetite was mostly feeble. The case of Swain, noticed in the preceding examples, was a curious instance to the contrary. Perhaps, in the whole management of the fever, there was no more delicate and important point of consideration than how to provide for the sufficient and proper alimentation of the patient, without risking too much the irritation of the digestive mucous membrane.

When the patient was seen early in the disease, if he had not been previously violently purged (which was too often the case), a gentle cathartic of oil in emulsion, in amount sufficient to clear the digestive canal, was administered. This was found always to act kindly, and with sufficient effect to unload the bowels, while the risk of subsequent mischief was much less than from calomel or the more powerful purgatives in too common use. The same thing was repeated, or emollient enemata substituted, as occasion required, throughout the course of the fever. Venesection was rarely employed. Even when the reaction was excessive, and vascular excitement intense, it was deemed best to deplete by other means than by loss of blood. This conclusion was drawn from the prevailing type of the epidemic, the class and condition of its subjects, and the tendency of the disease at any time to sink suddenly from a state of apparent exaltation to that of depression of all the vital

energies. When, therefore, violent vascular action was manifest, with burning surface, thirst, dry tongue, full and accelerated pulse, recourse was had to the administration of a mild solution of tartar emetic, and tepid sponging of the whole surface of the body. Often the milder refrigerants and the neutral mixture were substituted with good effect for the tartar-emetic, unless the bronchial or pulmonary tissues were involved. The intense cephalalgia was oftenest relieved by the application to the forehead of flannels dipped in hot vinegar and water; cold was sometimes preferred. Thirst was assuaged by demulcent drinks, or the effervescing draft, given frequently in small quantities. Frequent sponging, with tepid water or spirits and water, allayed the burning heat of the surface, to the great comfort of the patient. When the peculiar pungent odor from the body, referred to in the preceding description, was present, a mild solution of the chloride of soda was added to the mixture with good effect. Nausea and uneasiness of the stomach was relieved by a sinapism to the epigastrium. Sleep was induced at night by minute doses of the sulphate of morphia; from $\frac{1}{18}$ to $\frac{1}{8}$ of a grain of the solution, repeated once or twice at intervals of an hour, would often produce the desired effect. The general nervous disturbance where there was great sensitiveness, morbid vigilance, restlessness and subsultus, was allayed by camphor, either in the form of an emulsion or the ordinary camphor mixture of the pharmacopia. Not unfrequently would these means be followed by a gentle perspiration and relief of all the urgent symptoms.

As soon as signs of general exhaustion appeared, recourse was had to stimulants, which, once commenced, it was often necessary to continue throughout the whole course of the fever, even in the face of conditions commonly indicating an opposite plan. Nothing was more common than, while treating some serious local disturbance by depletive means, to continue at the same time vigorous stimulant measures, in order to keep the general system up to the vital point. Thus, oftentimes, would the patient seem to be borne along till the violence of the morbid influence was spent, and the *vis medicatrix naturæ* came kindly to his relief.

Of the stimulants, sherry and Madeira wines were chosen.

Combinations of a stimulant and tonic often produced a better effect. A mixture of sherry and the solution of the sulphate of quinine in equal parts was made, of which from $\frac{3}{4}$ ss. to $\frac{3}{4}$ i. was given every two hours, as the case required, or as the patient could bear. When the system had been much accustomed to strong drinks, brandy was preferred. Ale and porter were sometimes given, but seemed to answer better in the convalescent stage, when they are much relied on to sustain the strength; beef tea and the nourishing broths were administered at the same time with beneficial effects. In the advanced stages of the fever, when there is present muttering delirium, coma, involuntary evacuations, a fluttering pulse, cold extremities and rapid sinking of the powers of life, there were superadded to the above treatment stimulating injections, hot pediluvia, vigorous frictions to the spine, warmth to the surface, flying blisters, sinapisms to inside of thighs, legs and arms. The flagging energies would sometimes thus be arrested in desperate cases.

We cannot forbear, in this connection, to allude to a form of treatment first suggested and practised by Dr. Graves of Dublin in certain manifestations of typhus, and which was often employed by us in the epidemic under consideration. We mean the combination of tartar-emetic and opium given in the advanced stages of the fever. We are aware that much has been said in opposition to this treatment, as being empirical and irrational, equally potent for good and for evil, and many instances are cited in evidence of its uncertain effect. May not this be owing, in some measure, to a want of discrimination of the precise conditions that call for its use? With us it seemed particularly applicable to a class of patients in whom the disease assumed a *mixed* form, being a combination of the exalted and depressed types before alluded to; and when conjoined with much vascular excitement, manifested by a full, rapid, and bounding pulse, burning skin, hot head, and infected eyes, there was still evidence of the exhaustion of the vital energy, and the accompanying cerebral exaltation was not associated with inflammatory action. These conditions were present in many of our worst cases. They came in usually about the 10th or 12th day of the fever. The de-

lirium was violent in its manifestations,—of that busy and active kind peculiar to delirium tremens, and wholly different from the coma and stupor accompanying the purely low form of the disease. Restlessness, violent jactitation, and prolonged vigilance were among its distressing accompaniments. The patient must soon wear out under the unnatural excitement. In many instances of this nature, the mixture of Dr. Graves seemed to produce the desired effect, when all other means failed. What guided us most, and seemed from experience a sure indication for its use, was the state of the heart's action. If, conjoined with the assemblage of symptoms first noticed, its impulse was sufficiently strong to withstand the sedative influence of the mixture, we unhesitatingly gave it, and looked with certainty for its beneficial effect. In many instances we have seen patients thus apparently snatched from inevitable death. In view of these results, we could not forbear the use of means, the rationale of whose action we confess we do not fully understand.

The following examples, briefly stated, will show the condition of the patients thus treated, and illustrate the effect of the medication in question :—

CASE 7.—The first case we shall bring forward is that of Neil McNulty, who came a passenger in the ship Washington, and was landed at the Quarantine Station on Deer Island, Dec. 14th, 1847, being in the ninth day of the fever. He was a young man about 19 years of age, of vigorous habit and previous sound health. The vessel from which he was taken was crowded with the fever, and had encountered a long and stormy passage.

This patient had received no treatment. When he entered the wards livid maculæ were abundant over the whole body ; he had a crisp, dry, contracted tongue ; teeth and lips loaded with black sordes ; hard, full, and very rapid pulse ; pungent and burning heat of skin ; peculiar nauseous odor from the body ; hurried breathing, and involuntary passages of stools and urine. He had intense headache, flushed, almost livid face ; a fiery eye, and great nervous agitation. In defiance of the usual modes of active treatment, he rapidly grew worse.

The following day delirium of an exciting kind came on, accompanied by incoherent muttering, and raving by turns. He had slept none since he came into the ward. All the symptoms before named were aggravated in degree. He was now ordered a combination of tartar-emetic, laudanum and camphor in the following form—

℞. Antim. et tart. pot. gr. iv.
Tinct. Opii, 3j.
Mist. Camphoræ viij. at.

Of this mixture a tablespoonful to be given every half hour till three doses have been taken, after that every hour till sleep ensues. A blister was also applied to nape of the neck, and sinapisms to inside of thighs and legs. After the fourth or fifth dose of the mixture, the patient fell into a quiet sleep, which lasted eight or ten hours. He awoke wonderfully refreshed, and with all unfavorable symptoms manifestly relieved. The tendency to delirium was, however, still evident, and the general nervousness continued though in less degree. The antimonial mixture was here omitted for the greater part of a day, and other measures substituted; but the symptoms becoming aggravated, it was at once resumed, being now administered at longer intervals, and its effects carefully watched. From this time the patient passed rapidly on to convalescence and recovery.

It will be seen, that in this case we had to deal with a patient who had been neglected during the first eight or ten days of the disease, and on whom the fever had fastened with strong grasp, and developed its most alarming symptoms. Here were the burning heat of surface, the dry and crisped tongue, the irregular respiration, hard pulse, ferrety eye, and intense cephalalgia, which pointed to severe cerebral disturbance, with excited, nervous and vascular action.

At first we had directed our attention to the general condition, and plied vigorously the usual active remedies, being slow to adopt a practice which some had condemned as empirical and unphilosophical. In 36 or 48 hours after we find the whole condition of the patient worse. There is added, delirium and furious raving; the general subsultus increases, and there is persistent watchfulness,—symptoms which expe-

rience had taught us were most to be dreaded. At this juncture the mixture is tried as a last resort, and with almost magical effect.

CASE 8.—P. M., aged about 17, sanguine temperament, strong and robust frame; had been six months in this country. He was brought into the hospital on the 9th of December, when the fever had reached its 8th or 9th day. Had, on admission, maculæ of livid hue covering thickly the abdomen, chest, extremities and back; dry, harsh and burning hot skin; teeth and gums coated with black sordes; tongue swollen, dry and cracked, protruded with great difficulty; eyes red and suffused; pulse 140, full and bounding; breathing frequent, difficult, very irregular, being in one minute double its frequency at another. A strong, disagreeable odor emanated from the body; urine and fæces passed involuntarily, and very fetid. He had furious delirium, talked and raved incessantly, and made frequent attempts to get out of bed; universal tremors and subsultus. He had slept none for several days. Directed to remove the hair and apply a large blister to the back of the head and nape of neck; stimulating pediluvia; sinapisms to the calves of the legs. Also, ordered a draught composed of four drachms of camphor water, five drops of laudanum and $\frac{1}{4}$ of a grain of tartar-emetic, to be given every hour till three doses have been taken; then to be continued every second hour during the night, unless sleep supervenes.

On the following morning it was found that no good sleep had been procured, but there was manifest improvement of all the symptoms. The delirium was calmer; the nervous agitation abated; pulse diminished in frequency, full and soft. The surface had become moist, but the intense pungent heat remained. The same plan of treatment was continued several days, the mixture being given at longer or shorter intervals, and in doses varying with the urgency of the symptoms. Two or three times it was omitted, but, matters invariably growing worse, was resumed always with benefit.

The crisis in this case was delayed till about the 17th day, and the patient seemed meanwhile to *rest* upon the tartar-emetic treatment. A favorable crisis now appeared and con-

valescence was fully established. This patient was three times blistered on the back of the head, and took twenty to twenty-four ounces of the mixture.

CASE 9. resembles in its main features the two preceding. The subject here was 45 years old, a strong and robust man, in full health previously, but addicted to intemperate habits. He first came under our notice on the 27th day of December, in an advanced stage of the fever. Had then livid maculæ on every part of the body, except the face and neck, but presented no symptom calculated to excite alarm, excepting a noticeable degree of general nervous agitation. He was ordered five grains of camphor in emulsion every fourth hour, Dover's powder, gr. x., nocte.

Dec. 28th.—Got the value of half an hour's troubled sleep in all the night. Appeared in much the same condition as yesterday. Increase amount of camphor; sol. sulph. morphiæ gr. $\frac{1}{8}$, repeated every hour till half a grain is taken, unless sleep is procured; blisters; sinapisms.

Dec. 29th.—Patient has had no sleep since last visit. The nurse reports him to have been exceedingly restless and troublesome during the night. This morning appears in a state of active and busy delirium, closely resembling that seen in the subjects of delirium tremens. There is constant and universal tremor, violent raving and struggling; the eyes in rapid motion, glistening and ferreted from constant wakefulness; jactitation extreme; pulse scarcely to be counted. When asked to put out his tongue, it is protruded quickly and withdrawn with a jerk, accompanied with a violent closure of the jaws. Answers questions and obeys directions with alacrity, but relapses instantly into a state of busy delirium. The preceding prescriptions having failed of their usual effect, he was ordered a mixture composed of camphor water $\mathfrak{z}$ viii., tartar-emet. gr. ii., tinct. opii $\mathfrak{z}$ ii. Of this to take $\mathfrak{z}$ ss. every hour till the effect is manifest.

Dec. 30th.—Nurse reports that after the 3d or 4th dose of the mixture the patient fell into a deep and quiet sleep, which continued with one interruption till a late hour in the morning. Appears now every way improved; delirium wholly gone;

face more natural; exhibits only a slight degree of nervous tremor. Directed gr. $\frac{1}{2}$ antimony in $\frac{3}{4}$ ss. camphor emulsion every fourth hour.

Dec. 31st—Still improving; some nervous agitation yet apparent; other unfavorable symptoms gone; to continue prescription of yesterday at shorter intervals.

January 1st, 1848.—Convalescent.

The preceding examples will show very fairly the operation of this treatment, though by no means our worst cases. The notes of several others, far more interesting and desperate, have been mislaid. The relative quantities of antimony and opium must be varied according to the circumstances of the case. The camphor mixture is usually the best vehicle for administration. Should this be contra-indicated, pure water may be substituted. The mixture has often the effect, after three or four doses given in the manner above described, to produce gentle but copious evacuations of yellow fæcal matter from the bowels, with great relief to the patient. We would again mention the need of judgment and discrimination in the employment of this mode of treatment. Our own experience dictates it should only be used in cases where the assemblage of conditions previously named are present. Then it is invaluable.

Complications and incidental affections occurring in the acute stage.—These vary in their nature and degree of severity in different epidemics. In that at present under consideration, the brain and spinal cord were oftenest implicated. All the important viscera of the chest and abdomen were, however, liable to be attacked. Various anomalous symptoms would also appear in the course of the disease, which called for the exercise of judgment and discrimination in the use of remedial measures.

The modes of treatment adopted when the violence of the disease was determined to the head, have already been described. When the symptoms indicated that the base of the brain and medulla oblongata suffered most from the morbid effect, and there was perversion of the senses, and feeble and irregular respiratory action, with weak and *thready* pulse and nervous depression, local counter-irritation and revulsions were

conjoined with measures to counteract the general debility. Hot wine whey, or brandy, or both, flying blisters to various parts of the trunk, frictions along the spine and especially over the respiratory tract, sinapisms and stimulating pediluvia must be pushed boldly. Especially have we seen the best effects result from the application of a sinapism, or flannels wrung in hot water or aqua ammonia over the region of the medulla oblongata, and energetic friction of the spine between the shoulders, in cases of inequality and exhaustion of the respiratory power.

Laryngitis was seldom or never noticed. Bronchitis, alone or combined with partial pneumonia, was common, especially towards the close of the epidemic. Here, however, the symptoms were more those of congestion than active inflammation. There was a want of action rather than the overaction which characterizes these affections when a distinct disease, and the impediment to free aeration of the blood from accumulation of the altered secretions in the bronchial terminations, was more to be feared than the structural alteration. Hence the indication was to excite and stimulate the general action, while we sought to deplete and relieve the overloaded vessels of the parts involved by specific medicines and local applications. Dry cupping to various parts of the chest, blisters cautiously applied, irritants to the spine, and internally tartar-emetic in solution, were the means employed. Cough was allayed by expectorants of senega and squill. Wine and bark supported the general strength. These affections were the chief point of danger in subjects having a tendency to pulmonary complaints. Such patients often succumbed at an early period of the fever. In all the post-mortem examinations of typhus, there were marks of more or less congestion in the bronchia and lungs.

Gastritis, of a low form, was sometimes manifest. It was sometimes relieved by the administration of cool mucilaginous drinks, and ice in small quantities, with a sinapism or blister to the epigastrium. Leeches were sometimes indicated. The liver was not unfrequently affected, as manifested sometimes by depraved secretions, but more often by a total want of secretion. This condition of things would also, at times, be

accompanied by suppression of urine, and greatly increase the dangers of the case. Diarrhœa, in the acute stage, was not common. When present, it indicated the existence of irritated ingesta, and called for the employment of a mild, oleaginous purgative, with mucilaginous drinks, and fomentations to the abdomen. An opiate enema was sometimes required. Tympanites was also rarely seen, and then, could usually be traced to undue purgation, and inattention to diet, in patients admitted at an advanced stage of the fever. Too much indulgence in fluids, especially acid drinks, would bring it on occasionally. It was best treated, as suggested by Dr. Graves, by a turpentine stupe applied to the abdomen, and also the internal administration of turpentine, either by the mouth, or in the form of an enema.

Erysipelas of a non-malignant type occurred in a few instances.

Swelling of the parotid was an occasional concomitant of the fever, and proved a most troublesome and painful affection. It made its appearance towards the latter stages of the disease. Both glands were sometimes affected at the same time. They were found difficult to discuss by the usual measures; laying them open by the scalpel seemed to produce but little good effect. Most relief was produced by fomentations with hot vinegar, and infusion of hop. They commonly went into supuration, to the great annoyance and suffering, and extreme exhaustion of the patient. This affection occurred oftenest in the scrofulous habit, and when the patient had undergone a combination of privations previous to admission to the wards.

In two or three of the most malignant cases, hemorrhage from the nostrils took place, which was uncontrollable except by plugging the posterior nases. In this way, the patient's life was sometimes prolonged a few hours; the blood which flowed was in a state of absolute putridity.

Spasms and convulsions were noticed in a few instances, and were almost invariably fatal symptoms. They existed in an aggravated form in the case of Capt. Chandler, the superintendent of the House of Industry, who died at that institution of typhus in June 1847.

A curious affection, which often presented at some period

of the convalescence, was the occurrence of severe aching pains in the extremities. These pains were represented by the patient as very violent, and (it was frequently remarked) occasioned more complaining on the part of the sufferer, than any other symptom throughout the whole course of the disease. They were referred chiefly to the bones of the legs and arms. At first they were disregarded, but afterwards successfully treated with the solution of the iodide of potassium, an experiment suggested by Dr. Stedman (then superintending physician to the hospitals at South Boston), from the known efficacy of this remedy in the pains of tertiary syphilis, to which, both in kind and degree, those in question were strongly analogous. A few doses often sufficed to give complete and permanent relief.

Sequelæ, or secondary affection of typhus.—We have before alluded to the severe parotitis which sometimes presented, and which, perhaps, should rather be classed among the sequelæ or secondary effects of the disease, inasmuch as it came in at a late period, and seemed a residuary action of the previous poison in a vitiated system. Sloughing ulcers upon the scapulæ and sacrum occurred in some protracted cases. They were best treated by a strengthening diet, tonics, and the application to the parts of antiseptic and astringent washes.

But by far the most grave and frequent sequel to the fever, (and which, in our own mind, is deserving of equal consideration in its pathology and treatment with the acute stage,) was the peculiar *intestinal affection*, to which allusion has been made in a former part of this paper. It commonly made its appearance during the latter stages of convalescence, and was brought on by imprudence in diet, especially if accompanied by premature exposure to cold and wet. But sometimes it could be traced to no satisfactory cause. Its importance in a therapeutical view will be recognized, when we state that, at both the hospitals named, it was the cause of the majority of all the deaths that occurred from typhus, up to the time the autopsies, detailed in the following cases were made. To the consideration of this affection, the attention of the writer was early directed at the House of Industry in the spring of 1847. Its intractability to the ordinary remedial measures, and its

almost invariably fatal termination were well calculated to rouse inquiry and investigation. We had been able to find no account of its morbid anatomy among the British writers, and had, up to this time, made no post-mortem examination of such cases. With a view to ascertain, if possible, the pathology of this sequel to the fever, on which might be based a rational plan of treatment, a series of clinical and autopsical investigations were instituted, the results of which are given in the pages which follow. These results, so far as we can learn, had previously been unknown, or wholly overlooked. To our view, they have an important bearing on the therapeutical management of the fever, in both its primary and secondary forms, and will tend to throw light upon the mooted points in its pathology.* The autopsies of the next few cases represent fairly the pathological phenomena found in the secondary disease.

CASE 10.—Catharine Cochland, 24 years of age, born in Ireland, was admitted to Deer Island Hospital 22d Nov., 1847. She was of medium size and stature—rather delicate constitution, with a tendency to the scrofulous diathesis. She had been eight months in this country. When first admitted to the wards she was laboring under a severe attack of maculated typhus, which had then reached the sixth day. From this she recovered without any marked phenomena, with the exception of a slight attack of diarrhœa, which came on in an advanced stage of the fever, but yielded readily to the usual remedies.

During the latter period of her convalescence she partook freely of forbidden articles of diet, which was followed by

* The writer deems it proper to remark, that the peculiar pathological conditions described in this paper, and shown in the accompanying plates, are the result of his own personal observation and researches, though they have subsequently been alluded to and quoted by authors in a manner that did not leave this fact entirely clear. They were first noticed by him at Deer Island Hospital, in December, 1847, while pursuing a system of dissections in typhus, aided by Dr. C. A. Walker, one of the resident physicians at that institution; previous to which time, no autopsies of this disease had ever been made on the island.

diarrhœa in an aggravated form. This state of things she carefully concealed for two or three days from her nurse and medical attendants, when her rapidly failing strength attracted notice.

This was on the 23d December, at which time she had frequent discharges of thin, yellowish white frothy liquid, of very fetid odor. She had a flabby red tongue, feeble pulse, cool skin, and great general prostration, but complained of no pain. Her abdomen was full and soft, somewhat tender on pressure.

Dec. 24th.—No improvement—prostration great—stools frequent, very fetid, assume a darker hue—are mixed with large quantities of depraved secretions.

For three or four days following no improvement was observed; stools became more frequent, dark and offensive—strength rapidly failed. She died Dec. 30th, 6 o'clock, A. M.

Autopsy, 12 hours after death.—But little emaciation; no wasting of muscles; very slight depression of supra-clavicular region, more apparent on left side—in other respects chest presents nothing remarkable externally. Some tympanites of abdomen.

Interior of head, neck and thorax not examined.

Abdomen.—A layer of fat a fourth of an inch in thickness beneath the skin. On removing the integuments, contents of the cavity presented nothing remarkable externally. Omentum contained a moderate quantity of fat. Liver perfectly normal. Gall-bladder normal in size and appearance externally; filled with a dark, tenacious, tarry fluid. Spleen of natural size, color, and consistence. Pancreas normal. Stomach normal externally, contains half-a-pint of thin, greenish fluid; internal lining membrane of healthy color and consistence; natural secretion abundant.

Intestines.—Externally, discolored from about the commencement of the ileum, onward throughout the remainder of their extent. This apparent discoloration seemed rather an opacity of the walls, resulting from the affection of the internal lining membrane; it was most marked along the lower three feet of ileum. There were extensive old adhesions of ascending colon to parietes of abdomen. Internally, duodenum nor-

mal. Jejunum somewhat congested and discolored at its lower portion. Ileum has its internal lining uniformly discolored and congested; in its upper third the membrane becomes sensibly thickened, which thickening gradually increases till within two or three feet from the ileo-cæcal valve, when it continues for the remaining distance the same. From about five feet above ileo-cæcal valve downward, the mucous membrane puts on a peculiar appearance. The thickening here amounts to real hypertrophy, and appears in the form of transverse *ridges* thickly crowded together, completely encircling the intestine, and raised from a line and a half to two lines above the general surface; these ridges terminate abruptly at the border of Peyer's patches, giving to them a depressed appearance, which at first led to the supposition that they were ulcerated or otherwise altered from their normal condition; but on a careful examination these glands were found unaffected, the mucous membrane over them being entire and normal.*

The Large intestine in the cæcum, ascending and first half of transverse colon, reveals its internal lining somewhat thickened, with occasional patches of ulceration not extensive or deep; from about the middle of transverse colon these superficial ulcerations become more numerous; near the angle formed by the transverse and descending portions, the thickening is suddenly much increased, with hypertrophy of the muscular coat, much diminishing, for the space of a couple of inches, the calibre of the tube. This last has the appearance of being an old lesion. Just above this point the intestine is sacculated, and the ulcerative points more numerous, deep and extensive. Along the descending colon and upper half of the rectum the ulcerations and thickening are still more manifest. The internal surface of this intestine is blackened throughout. The ulcerations are confined to the mucous coat, irregular and varied in size, covered with a foul sanious exudation.

Of the mesenteric glands, some few at upper portion exhibited chronic enlargement, apparently of long standing; two or three towards lower portions of ileum were slightly enlarged

* See plate I.

and evidently somewhat inflamed—while others still were partly filled with tubercular matter, both in its crude and softened state. The glands of Brunner and the isolated follicles were not noticed.

Remaining contents of abdomen normal.

The patient complained of very little pain throughout. The intellect was unaffected.

The interior of the head and chest were not examined, the autopsy being necessarily made in the evening, after an unusually laborious and depressing attendance in the fever wards of the Hospital. From the constitution and previous history of the patient, we might infer that considerable alterations would have been found in the lungs—but it is not probable that either the chest or head would have revealed changes having any important connection with the peculiar lesions found in the intestinal tract.

CASE 11.—James Warnock, aged 37, in previous good health, was admitted to Deer Island Hospital Dec. 6th, with fever. He had been several days ill.

It was a marked case of maculated typhus, of medium severity. There was no diarrhœa during the acute stage. The disease was of the average duration.

The patient recovered from the fever with no untoward symptom. He had been transferred to the convalescent ward, and for two or three days had been able to leave his bed and walk about the room. He had a strong appetite, and, contrary to injunctions, partook prematurely, though in moderate quantity, of solid diet. Immediately after (the 2d of January), he was seized with diarrhœa. He had at first six or eight discharges in the twenty-four hours, liquid, yellowish, and slimy. After two or three days the stools increased in frequency, deepened in color, were mixed with depraved secretions, became reddish, and finally almost black and very offensive.

The patient complained but little of pain in the abdomen; there was no tympanites, and slight tenderness on pressure. His strength failed rapidly, and he died January 11th, at 8

A. M.

Autopsy, 48 hours after death.—Subject well developed, large, muscular. Emaciation not marked. Chest large and full. Abdomen sunken, but not discolored.

On removal of integuments, contents of abdomen present the following appearances: Omentum contains a medium quantity of fat. Liver externally of somewhat deeper color than natural, its parenchyma congested but not disorganized. Gall-bladder large, distended to the utmost with a thick, tarry fluid. Pancreas, spleen and kidneys, normal.

Stomach normal externally; contains a pint of thin, grayish fluid. Internal lining covered with a grayish, tenacious mucus; mucous membrane itself slightly injected near pyloric orifice, otherwise normal in every part.

Intestines.—Externally there appears some discoloration of duodenum, and upper part of jejunum, more at lower half of ileum, descending colon and rectum. Both small and large intestines contain in every part a grayish, pultaceous fluid, in considerable quantity. A few small collections of fæcal matter, in color and consistence like chocolate, found in lower portion of ileum. Veins of submucous cellular tissue a little engorged in duodenum, and upper part of jejunum; mucous membrane in these portions natural, as also throughout remainder of jejunum and upper half of ileum, from which point injection begins to be marked, accompanied by thickening. This condition of the membrane increases till within about two and a half feet from ileo-cæcal valve, when both the congestion and thickening become strongly marked, appearing here and there, for the space of a few inches in extent, in the form of transverse lines raised from the general surface. Near the ileo-cæcal valve, to the extent of four inches, this ridged appearance is remarkable—the elevations being from a line to a line and a half in height, and one or two lines in breadth. Within a couple of inches of the cæcum are observed a few points of ulceration, of the size of a pin's head, extending partly through the mucous coat. In but one instance are Peyer's patches visible; it here presenting in a slight degree the shaven-beard appearance, the thickening elsewhere noticed ceasing at the border of the patch, giving it a depressed appearance. The cæcal extremity of colon shows considerable

congestion and thickening, with commencing points of ulceration; these appearances increase along the ascending and transverse portions, and are still more marked in descending portion and upper part of rectum. None of the ulcerations in this case exceed in size a split pea; they are confined to the mucous coat.

There is no alteration of mesenteric glands. Remaining contents of abdomen normal.

CASE 12.—Patrick Lochlin, 25 years of age, was admitted to Hospital on Deer Island, Oct. 20th, being then in the initiatory stage of the fever. His previous health had been good.

The fever was well marked, severe and protracted. Convalescence was proportionally slow, but complete. The patient had left the wards, and had been engaged in out-door employment for two or three days, when diarrhœa set in. This was on the 12th of December. The discharges at first amounted to not more than four or five in the twenty-four hours. They were liquid, yellowish, mingled with mucus, not very offensive. Once or twice they were checked by the powders of ipecac, and opium, assisted by the acetate of lead. The abdomen was sunken, somewhat tender on pressure. The symptoms gradually assumed a graver character; prostration became marked; the stools were more frequent, darker in hue, became mingled with depraved mucus and blood, and were very fetid. For the last four or five days they were of a slaty color, passed almost constantly and involuntarily.

Death occurred on the 13th January. The patient had throughout no tympanites, and the soreness and tenderness on pressure were not very marked. He made no complaint, but bore upon his face a peculiar expression of anxiety and suffering. His intellect was unaffected.

Autopsy, 4 hours after death.—Subject of medium size, well developed; much emaciation. Chest full, resonant. Abdomen sunken; but a thin tissue of fat beneath the skin over chest and abdomen.

Cavity of abdomen.—Omentum free from fat. Right lobe of liver a little darker than natural externally; structure of same lobe rather darker than usual in its right half; in other respects this viscus normal. Pancreas normal. Spleen natural in size;

its texture disorganized to the extent of an inch and a half on its upper extremity, and presents here a superficial abscess three quarters of an inch in diameter, filled with ill-conditioned pus. Kidneys normal. Stomach externally normal; contains a pint of thin greenish fluid; its mucous lining, to the extent of three or four inches around cardiac orifice, studded with minute red points, mostly gathered in clusters from half to three quarters of an inch in diameter; its texture normal in all its extent.

Intestines.—Externally appear a little discolored in duodenum and first part of jejunum; this dark color (opacity) becomes evident again and more marked at beginning of ileum and increases as we descend the tube; in large intestines it is most apparent in descending colon and upper half of rectum. Duodenum and upper portions of jejunum contain a greenish fluid: ileum and colon moderately filled with a grayish semi-fluid matter adherent to their walls. Mucous membrane of duodenum is considerably congested; that of upper portion of jejunum is also darker than usual, but presents no marked injection or thickening; texture normal. Valvulæ conniventes in their natural condition.

In the upper portions of ileum the dark color and thickening of mucous membrane becomes manifest; these conditions decrease as we descend the canal, and are most marked about four feet above ileo-cæcal valve. The thickening along lower two thirds of ileum assumes the form of rough, prominent ridges, blackened on their summits. These prominences are at first inconsiderable, and separated by an interval of three to six lines; farther on they are increased in number, as also in breadth and height; four feet above ileo-cæcal valve they resemble hypertrophied valvulæ conniventes, being a line apart, and elevated from one to two lines, hard, some of them serrated on their summits; they continue thus till within two or three inches from the cæcum. The ridges extend completely around the intestine unless intercepted by the patches of Peyer, in which case the elevation terminates abruptly at the border of the patch and recommences on the opposite side. The patches are therefore apparently depressed; and are covered with a dark coating of depraved secretion, which is readily scraped off by the scalpel, revealing the membrane beneath

entire. At the junction with the cæcum, for the space of three or four inches, the mucous surface appears roughened, granulated, with here and there a few thin flakes of a lymph-like substance. Some few of the solitary glands are here visible, raised and somewhat reddened, and interspersed are a few points of ulceration.*

The cæcum exhibits the solitary glands enlarged, inflamed, surrounded each with a distinct red border, the central point being in some instances ulcerated; there is also thickening and injection of the mucous lining, with accompanying hypertrophy of the muscular coat. These conditions observed along the ascending colon—less in its tranverse portion—again very marked in descending portion. The interior of large intestine throughout is much thickened and roughened; in the descending colon and upper part of the rectum the mucous coat is extensively ulcerated.†

No alteration of mesenteric glands. Remaining contents of abdomen normal.

CASE 13.—Michael McCall, aged 23, was admitted to Deer Island Hospital on the 28th December—three days ill. The fever was distinctly marked, though of a mild form. It early assumed the depressing type, demanding after the first week the cautious but constant employment of stimulants and tonics. The disease was of short duration. It presented no distinct crisis, was marked by no delirium, no diarrhœa or tympanites. Convalescence was rapid and complete. On Sunday, January 10th, permission was given the patient to dress and walk about the wards. This he did, however, for the first time on Tuesday following. Next day the nurse reported him to have had, during the night previous, four large liquid yellow stools. He complained of no pain. Abdomen slightly tender on pressure; no tympanites. It was found upon inquiry that he had partaken the day before of forbidden articles of diet. The stools increased in frequency. On Friday night following they became dark, bloody, jelly-like and extremely offensive. He was greatly exhausted. Patient complained of but little pain; there was no meteorism; intellect clear throughout. Death took place about noon on the 23d.

* Plate I. figs. 3 & 4, and plate II. fig. 1. † Plate II. figs. 2, 3.

Autopsy, 48 hours after death.—Externally—but little emaciation; marked rigidity; no discoloration of surface; chest full and resonant; abdomen sunken.

Abdomen.—Adeps one fourth of an inch in thickness beneath the skin; omentum has also a medium quantity of fat. Liver of usual size and color; superficially shows a few stains like ecchymosed spots; texture normal; vessels filled with fluid black blood. Gall-bladder distended with a tenacious molasses-like fluid. Spleen rather below the average size; color and texture normal. Pancreas and kidneys healthy.

Stomach.—Externally normal; uniform reddening, extending along most of lesser as also cardiac half of greater curve, is seen through the translucent outer coat. Contains in its cavity five ounces of grayish fluid. Its internal lining thickly studded with minute red points in those portions corresponding with the apparent reddening externally.

Intestines.—Externally, duodenum and jejunum natural; ileum and colon appear somewhat discolored throughout whole extent—no considerable opacity of their walls. Jejunum and ileum empty, and somewhat contracted. Large intestines contain only a pultaceous grayish matter. Internally, duodenum and jejunum normal; in upper portion of ileum congestion becomes manifest, and from about its middle, onward through all its extent, lining membrane of ileum is much injected, thickened and opaque. In one or two instances only, to the extent of three or four inches, the thickening appears in the form of elevated transverse lines, only partly encircling the intestine, and from four to six lines apart. This is about the commencement of lower third of ileum. Peyer's patches are in several instances distinctly visible, but not materially altered. Brunner's and isolated follicles not developed. The large intestine shows its mucous lining throughout injected and thickened. In descending colon and rectum these appearances are most remarked, the lining membrane being here intensely reddened in patches and thickened irregularly.*

The solitary glands are also manifest in descending colon, slightly raised and inflamed, appearing like minute pustules on

* Plate II. fig. 3.

the surface of the membrane. No ulcerations noticed in any part of intestinal tract.

Mesenteric glands small and firm. Remaining contents of abdomen normal.

CASE 14.—Philip McGonagle, æt. 16, of sanguine habit and strong make, was admitted to Quarantine Hospital Dec. 9th, about the eighth day of fever. He had all the symptoms of maculated typhus in a marked degree. The fever continued, with uncommon severity, nine days longer, when a distinct crisis occurred. There was no diarrhœa in the acute stage.

Convalescence had gone on rapidly and favorably till the 1st January following, at which time the patient had an imperfect relapse; from this, also, he recovered completely, and had been allowed to dress and walk about the room. His appetite was strong, but he was restricted to the use of bland farinaceous articles, together with the lighter broths. This injunction, however, he did not regard, and found means to partake rather freely of solid diet.

About this time, forty-five days from the first accession of fever, and fifteen from the period of relapse, he was seized with secondary diarrhœa. There were at first five or six discharges in the twenty-four hours, copious, liquid and slimy, unattended with much pain. There was no tympanites and but little tenderness on pressure. The symptoms increased daily in severity. Patient failed rapidly in strength. His countenance assumed a peculiar expression of anxiety, stools became more frequent and fetid, were mixed with depraved secretions and with blood, and for two or three days preceding his death passed involuntarily. In the latter stage of the affection there existed constant dull pain in the bowels, and considerable tenderness on pressure. The mind was unaffected.

Death occurred Monday, January 24th, at 2 A. M.

Autopsy, 32 hours after death.—Subject of medium size, much emaciated. Considerable rigidity of muscles. Chest capacious, resonant. Abdomen sunken and discolored. Sub-cellular tissue of chest and abdomen contains but little fat.

Cavity of abdomen.—Omentum thin and transparent. Liver natural in size; superficially around gall-bladder, as also

on most of under surface of right lobe, of deep bluish-black color; structure normal. Gall-bladder greenish yellow externally; moderately distended with a fluid-like molasses in consistence and color. Kidneys healthy. Spleen a fourth larger than usual, natural externally; contents dark and grumous; structure natural.

Stomach contains a pint of greenish watery fluid; its mucous lining shows nothing remarkable.

Intestines.—Externally ileum appears discolored along its whole course, in lower two thirds opaque; veins along line of mesenteric attachment distinct, dark, congested. Colon uniformly discolored, of greenish tinge. Ileum and colon moderately filled with a grayish pultaceous mass. Internal lining of duodenum somewhat darker than usual; that of lower portion of jejunum slightly reddened in patches. In upper portion of ileum injection becomes uniform and marked, and a tendency to thickening in the form of transverse parallel lines is apparent; throughout its lower two thirds, with the exception of an occasional interval of three or four inches, well-marked prominent ridges appear, completely encircling the cavity of the intestine, unless broken by the intervention of the patches of Peyer.* At first these ridges are about half a line in height, the same in breadth, and three or four lines apart. About seven feet from ileo-cæcal valve they are more numerous, broader and more prominent; two and a half feet lower they attain their maximum, being at this point crowded thickly together, a line and a half in breadth and two lines or more in height. On their summits is a greenish-black deposit, which can be readily scraped off with the scalpel. The interspaces are brilliantly injected high up in the ileum, while its lower portions present a dark uniform congestion. The ridges do not exist within three or four inches of valve. The glands of Peyer are distinctly seen along whole course of ileum, like white patches depressed, presenting the indented and dotted appearance, their mucous covering entire. Brunner's and isolated glands not discernible. No traces of ulceration in any part of small intestines.

* Plate I. figs. 1, 2, 3.

In the cœcum the isolated follicles are seen appearing like minute dark points. Throughout the colon thickening is very marked, and appears in irregular elevations, blackened on their summits. In the interspaces is seen the same vivid injection noticed in the upper portions of ileum. Here and there are appearances of a lymph-like exudation, but which cannot be scraped off by the scalpel. These conditions are less marked in the transverse portion. The rectum is uniformly blackened and much thickened. A few superficial ulcerations of the size of a pin-head are scattered throughout the large intestine.* Mesenteric glands firm, varying in size from that of a millet seed to a large pea. Bladder normal.†

The average duration of the fever in the five cases first adduced, was sixteen days; that of the secondary affection, thirteen days. The period in the convalescence in which diarrhœa first manifested itself, was the nineteenth day; and from the first accession of fever, the forty-seventh, which last two conditions would fall short were a larger number of cases given.

It will be seen that, in addition to the alterations in the large intestines, certain well-marked and peculiar lesions found in the *ileum*, characterize the pathology of the secondary affection. In all the subjects examined, these lesions were more or less developed. They are found very prominent in three of the five cases above presented, less marked in the other two. It is worthy of notice, that, in the latter, the preceding fever was milder and of shorter duration.

It would seem that there exists an intimate connection between the conditions of the intestinal tract in primary typhus, and the changes which occur in the small intestines in the secondary disease: the latter correspond in situation with the uniform congestion and discoloration pointed out in the preceding autopsies of subjects that died in the acute stage of the

* Plate II. figures 2 and 3.

† These cases are taken from an article by the writer published in the January and February numbers of the Boston Medical and Surgical Journal for 1848, entitled "*Clinical Notes and Post-Mortem Illustrations of Typhus or Ship Fever.*"

fever. From these analogies, we were led to reflect upon the probability of a particular direction to these parts of the morbid influence from the first, and thereby induced to modify our treatment in the acute stage, so far as to avoid, from the commencement, all that could irritate these sensitive portions of the digestive tube, whether as food, drink, or medicines; believing that these specific morbid effects could better thus be avoided than remedied when once induced. We had before been accustomed, in the formative stage of the fever, to give in conjunction with an emetic, a strong purgative, with a view to aid, by the revulsive effect thus produced on the intestinal surface, in arresting the course of the disease in limine. But after the discovery of these peculiar pathological conditions of the secondary affection, this practice was wholly abandoned. None but mild oleaginous purgatives were prescribed, and the blandest nutriment and drinks allowed from first to last, both during the active period of the fever and the stage of convalescence. The effect of this change was immediately apparent. The ratio of mortality (in the belief of the writer) was diminished at least one-third.

For a more perfect understanding of these important lesions, the attention of the reader is directed to the accompanying lithographs, which were obtained from daguerreotype impressions, taken by Mr. I. A. Whipple from the specimens themselves, immediately after their removal from the body.* Sections of the whole portion of the intestinal tract affected are given in order, beginning at the upper part of the ileum and ending with the sigmoid flexure of the colon; showing with exactness and fidelity the morbid appearances discovered in the cases first described.

No form of treatment adopted during the actual occurrence of the dysenteric affection proved satisfactory. The following seemed the best, after repeated trials: Diet restricted solely to the use of unirritating articles; mucilaginous drinks only allowed. External irritants applied freely to the abdomen, of

* Several accurate colored sketches of these lesions were also made by Mr. Seagur, the artist, which are deposited in the Pathological Cabinet of the Boston Society for Medical Improvement.

which the turpentine stupe seemed to answer best. Internally, the medication consisted of the administration of Dover's powder in small doses frequently repeated, and of opium combined with the acetate of lead. This last combination seemed to produce more effect than the usual opiate remedies heretofore employed. Conjoined with these measures, recourse was had to injections of starch mucilage, alone and in combination with laudanum, or the nitrate of silver in solution. Efforts were made to apply these remedies more directly to the parts implicated, by first introducing a flexible tube far up into the intestine, to which a syringe was attached, and thence the contents forced into the bowel. As the vital energies flagged, stimulants were given, warmth applied to the extremities, and sinapisms and flying blisters to various points.

Treatment during convalescence.—We have stated in the preceding pages the period in convalescence when the secondary diarrhœa was most likely to occur. The patient could not be considered safe till the expiration of three or four weeks from its commencement. Too much care as to premature exposure or indiscretion in diet, however slight, cannot be observed. The appetite meanwhile is of course craving.* Demulcent drinks, especially solutions of gum arabic, seem well adapted to this period, being nutritious and at the same time unirritating. The milder farinaceous articles should be added by degrees. Relapses of the *primary* fever were invariably milder and of shorter duration than the first attack; the febrile action would run high for a few days; but the graver symptoms were not present. The maculæ did not reappear. We do not recollect to have witnessed a second attack of genuine typhus after a full recovery.

We have thus endeavored to give briefly the results of our personal experience and researches in this fever during the year of its first extensive appearance upon our shores as an epidemic. Its general history, nature and pathology, could not be fully considered in this connection but by making this

* On one occasion several convalescent patients under these restrictions escaped from the wards at night, and gained access to a neighboring corn-field, where they partook freely of the unripe fruit. The fatal diarrhœa soon followed, without mercy.

dissertation longer than is consistent with its publication here. These observations extend to about sixteen hundred cases which came under our treatment.

During the past season the writer has had opportunity to witness the fever as it appeared at the Emigrants' Hospital on Ward's Island and the Marine Hospital in New-York. The main features of the disease at these stations, so far as could be ascertained, harmonize well with those in the epidemic above described. The secondary dysenteric affection had existed, and was of a similar intractable and fatal type. Erysipelas and extensive swelling of the parotid glands had been frequent during the past season.*

The whole subject in question is replete with interest, and seems destined to occupy a full share of the attention of the medical profession in this country. From the intimate relations we are to hold with the Old World, the nationality of this disease will soon be lost, and the typhus fever of Great Britain become also the true typhus of America—differing in all its essential points from the dothinentérite, which is endemic here, by as much as variola differs from scarlatina. It is to be hoped that the facts and appearances connected with the visitations of this malady, at various points along our coast and in the interior, will be carefully collected and given to the public with impartiality and candor, that we may at length obtain materials sufficient to enable us to form a just estimate of the character of a fever yet obscure in many of its points, and whose eccentricities have tended much to confuse and perplex the minds of those who know it only as revealed in some particular locality, or as confined to a single epidemic.

* The fever prevailed last winter at the Baltimore Alms House in a peculiarly malignant form, about 33 *per cent.* of all the cases proving fatal. For a full description of this epidemic, see the instructive paper of Dr. Wynne, published in the April number of the Amer. Jour. of Medical Sciences, Phila.

ART. II.—*On Suppurative Inflammation of the Knee Joint ; with Cases and Remarks.* By JOHN O. STONE, M. D., one of the Surgeons to Bellevue Hospital.*

IT has seemed to me that the *dangers* arising from suppuration of the knee joint have not been fully appreciated, or if known, that the *treatment* best calculated to obviate them has not been established. My object in the following paper is to direct attention to these neglected points. I shall therefore present my cases in the order that they occurred, with such remarks from others as have, from time to time, fallen under my notice.

In the year 1847, I. L., of Jersey City, consulted me for a diseased knee, which had already troubled him for four years. His age was 45. His knee was red, tumid, had a gelatinous feel, and was painful on exercise. He had lately suspended all treatment, and was deliberating upon the question of amputation which had been recommended. His pulse was natural, only 70 a minute. His appetite good, and the case was regarded as one well suited for trying the beneficial effects of further treatment.

I rendered the knee immovable by means of pasteboard splints and starch bandages, gave iodine, hydriodate of potash, and the different preparations of iron, &c.

The pain soon left the limb, and was not felt unless the foot was struck, or the heel caught while walking, which he was encouraged to do by the aid of crutches, on account of his feeble health.

This treatment, with frictions with various ointments, was continued without much change for nine or ten months, when small camphor moxas were applied to the knee ; these usually healed after a short time had elapsed, but at one of my visits I discovered that one of the burnt spots had not healed, and that it discharged a thin glairy fluid. No new symptom appeared until a week afterwards, then the knee swelled, and became exquisitely painful. The active symptoms subsided, and a free discharge of pus and serum followed. The discharge,

* Read before the Society for Med. Inquiry, June, 1851.

which consisted of pus and serum, but chiefly the latter, could be pressed from three to four inches above the patella, on each side of the rectus tendon, and air having entered the openings, gave to the fingers a peculiar boggy sensation.

New openings formed, and he became so much reduced, that his life was despaired of. By means of brandy and other stimuli, he was raised from great weakness to a state of comparative strength and freedom from pain. The question of amputation suggested itself, and was much meditated upon. But both limbs became much swelled from œdema as high as the top of the thighs, and the scrotum also was dropsical.

It was not thought proper to amputate under such circumstances; and an attempt was made, by raising the limbs, to promote absorption of the fluid.

But a troublesome cough came on, with other symptoms of tubercles in his lungs. During the month of June, he was taken with a diarrhœa, which reduced him to a very feeble state. Chalk mixture, laudanum, and tincture of catechu were given, and checked the diarrhœa, but the hot weather, and his various afflictions, sunk him lower and lower, and he died on the 16th of July. It is worthy of note, that during the latter period of his life, the swelling of the limbs subsided, apparently as if drained off through the openings about the knee.

I happened to be in his neighborhood on the day of his death, and examined the knee joint. The cartilages on the heads of the femur and tibia were nearly entirely removed by absorption, and the bones were bare and roughened. The cartilage of the patella was partially absorbed, and the bone here and there exposed. The cavities along and under the rectus tendon communicated with the joint.

By delaying to amputate when the patient first put himself under my care, a life was sacrificed. The reasons for delay were good, and yet he died from an unexpected ulceration of the synovial membrane, and, consequently, with suppuration in the joint, and an extension of the pus under and along the rectus tendon. To be thus defeated, when I had held out hopes to the patient, was a grievous disappointment.

I will not wait to discuss the interesting questions which

arise with regard to amputation, the effects of moxas, &c., but will only ask, as the disease advanced, and the joint became acutely inflamed, and filled with pus and synovial fluid, whether I should have amputated, or freely incised the joint?

As we proceed with our subject, the dangers of suppuration of the knee joint will be fully seen, and when it is shown that it may come on insidiously, and is full of peril, it will be confessed, I think, that all suggestions as to the treatment are worthy of the most serious consideration.

In the year 1849 I saw a thigh amputated and a large flow of matter followed the incision. The morbid appearances in the joint were similar to what I have detailed above.

The matter came from the knee joint through some ulceration of the synovial membrane, and thus extended up the thigh along the tendon of the rectus. The patient was much prostrated at the time of the operation, and survived it only a few days.

Since then I have witnessed other amputations in patients similarly affected, and the results were also unfortunate.

In connection with these cases I met with the following pertinent remarks in M. Lisfranc's "Clinique Chirurgicale:" he says, "Sometimes abscesses form *about* white swellings, and you must open them as quickly as possible; if you do not, they will form extensive collections under the skin and fistulæ will be established, which are cured with difficulty. If the walls of these purulent sacs inflame, the degeneration of the discharge or its excessive quantity will endanger your patient's life."

"In a case where there is fluctuation on a level with the joint and about it, the question will arise whether it is an effusion into the joint itself or only an abscess. We know that *the distended capsule will sometimes rise as high as the union of the lower with the middle third of the thigh, and if this capsule should be perforated by the matter the pus will extend far beyond these limits.* We know, too, that an abscess may be formed external to the joint, and so situated, back to back as it were with the capsule of the joint, as to render the diagnosis obscure. Examination of diseased limbs after death has proved the possible existence of these different pecu-

liarities, and I have seen a number of the most distinguished surgeons, who had met in consultation in such cases of difficult diagnosis, unable to agree; nor do I believe in the present state of our knowledge that a certain diagnosis can be made."

In another place he says, "Distrust all abscesses which lie two or three inches under the knee-joint. A patient in the hospital La Pitié, had been for a long time affected with a chronic disease of the knee; the inflammation being occasionally acute, and then again chronic. An abscess formed which was painful and hard, but soon softened; no fluctuation was ever felt; on being opened, a sero-purulent and flocculent discharge issued. Every thing went on well until the sixth day; then the joint, which heretofore showed no indications of effusion into its cavity, became filled with matter and air, and a violent fever arose, which compelled me to amputate the thigh. I then found an acute inflammation of the capsule of the joint, and a perforation of the capsule not greater than the heads of two pins united. I think that an ulcerative inflammation had opened the capsule, and that the opening was so small that no sense of fluctuation was communicated to the fingers between the matter in the abscess and the fluid in the joint; that in fact the matter had escaped from the joint into the abscess, but that the opening itself or the flocculent discharge acted like a valve to prevent its free return, and thus gave cause for the belief that the two collections were distinct and incommunicable."

Mr. Aston Key says, "That scrofulous joints are sometimes seized with acute synovial inflammation; suppuration rapidly ensues, and the failing of the patient's health and powers often require amputation of the limb." When the disease commences in the bone, synovial inflammation may succeed upon ulceration of the cartilage. If suppuration takes place in the cavity of the joint, the synovial membrane ulcerates and allows the matter to burrow between the muscles of the limb. Fistulous openings form at length, and tend in some measure to abate the patient's sufferings. The effect, however, in the constitution is such that amputation is usually resorted to for the preservation of life.

Mr. Brodie remarks that "extensive destruction of the

cartilages with suppuration may follow neglected synovial inflammation. But usually the ulceration of the cartilages precedes the synovitis, in which case the synovitis follows as a consequence of the formation of an abscess in the articular cavity. The history of the case must guide us in deciding where the disease originates, but wherever it may have originated when it has reached the suppurative stage, there is little prospect of benefit except in amputation of the limb."

Mr. Alcock has "known erosion of the cartilages to take place in five days," after inflammation of the synovial membrane has arisen from slight injuries.

There can be no necessity of multiplying evidence. These scattered views are sufficient to inform us, of the dangers attendant upon suppurative inflammation of the knee joint.

The following case next came under my care. It will be perceived, however, that the cause of the inflammation was a carious patella, and not as in the previous cases, a scrofulous affection of the knee. In relating it, I shall dwell especially on the treatment I felt warranted in recommending, from my past experience, supported as it is by the reasonable opinion held by the best military surgeons, that a large wound of a joint is much safer than a small one.

In November, 1850, John —, a young and healthy Irishman, came under my care. Ten days previously he had twisted his knee, and an abscess had formed on the outer edge of the patella, which had been opened. At first sight, hopes were indulged, from the slightness of the constitutional symptoms, that he would do well without any interference. But inflammation of the joint soon came on, and the constitutional irritation was very severe. On passing a probe into the wound made before I had charge of him, I could touch the bare patella, and did actually remove a portion of it, in a carious state. The probe could be passed under the patella; and on pressing upon the patella, matter exuded, indicating that the joint was opened and suppurating. The smallness of the opening was an impediment to the free discharge of matter. Matter had also collected under the integuments, on each side of the joint, and was evacuated by free incisions.

A consultation was called, and all agreed as to the impro-

priety of immediate amputation. I then proposed to make an incision through the ligamentum patellæ into the joint, and at the same time to remove the carious patella. I was overruled, and it was decided to trust to position, diet, and stimuli.

The patient passed from under my care ; for a time became better ; the appetite good, and the pulse came down to 80. By the first of February, 1851, his health had gradually failed. Large abscesses had formed along the muscles of the thigh, and enfeebled as he was, it became necessary to amputate the limb. Shortly after this he died.

On examination of the joint, the patella was found to be carious. The femur and tibia were anchylosed without presenting any bare surfaces of bone. Abscesses were found to have extended up the thigh to a point higher than that at which the limb was amputated. The bone had been sawn just above the middle of the limb.

There is no doubt in this case, that the synovial inflammation was caused by the carious patella. A moment's thought would have led us to expect this as a natural consequence, for its cartilage is thin, and lies in close contact with the synovial membrane. The patient, as proved by the dissection, died from the collection of matter in the thigh after the morbid action in the joint had ceased, and ankylosis had been effected. I would ask, then, if the patella had been removed, and the joint freely opened, whether it would not have been reasonable to believe that ankylosis would have been promoted and the subsequent train of evils which followed and caused his death, have been avoided ?

Let us review the reasons in support of this opinion :

The joint was already opened. Of this there was no diversity of sentiment. The matter, on account of the smallness of the outlet, distended the synovial capsule, and caused constitutional excitement. There was danger that the synovial membrane would become ulcerated at some other spot, and that the matter would extend up the thigh along the tendon of the rectus muscle ; that if this should take place, the condition of the patient, which, up to this moment, had been hopeful, would become one full of danger. Constitutional irritation would increase ; matter would burrow in the interstices of the muscles,

forming large abscesses in the limb, the sides of which would also become secreting surfaces of pus; the patient's strength would become exhausted, and we should probably be compelled, in order to escape from this desperate state of things, to amputate the limb when he was least able to bear it; that amputation was a very doubtful expedient, for it would probably hasten the fatal result. The patella was carious, and being a source of irritation, ought to be removed. Its removal would open the joint extensively, but, then, the matter would escape readily, and the constitutional symptoms, probably, at once subside. Matter, if allowed to remain in the joint, besides being an irritant, might also cause inflammation and caries of the ends of the bones. If a free incision should be made, no additional trouble would be caused, and we might expect ankylosis, the best result to be hoped for under any treatment. Experience in wounds in the joints had proved that large wounds, which gave a free discharge to matter, were less dangerous than small wounds. A mere inflammation of the synovial membrane does not cause constitutional irritation, provided that the matter can be freely discharged. And this is illustrated by those cases where amputation through joints, or excision of the heads of the bones, has been performed, where, of course, the synovial capsule covering the ends of the bones, must inflame, and yet, on account of the freedom with which the matter escapes, produces, in many instances, an inappreciable degree of excitement.

Before closing with this case we would make a quotation from Mr. Alcock, which confirms all we have said, and embodies the sentiments entertained by the best military authorities, whose experience on inflamed joints is far greater than is met with in civil practice. He says, "I am strongly inclined to the conclusion that injuries of the joints are not fatal in proportion to the extent of surface laid open. The most dangerous of these wounds I believe to be punctured, or such wounds as a musket ball creates. The most violent inflammatory action ensues in the highly susceptible synovial membrane. Fluid is effused and pent up, the whole limb becomes involved, the system takes the alarm, and sympathizes often to a fearful extent, &c." "Matter (he says in another place)

quickly erodes all the articulating surfaces. I have seen exceptions, but they are few. It burrows among the muscles, extending upwards and downwards, involving the whole limb in a disorganizing and suppurative disease. No sooner then is suppuration established than it becomes necessary to devise the best means of obtaining its evacuation, and to secure its draining off in proportion, or as fast as it forms. Any fears of the contact of air I cannot but think are out of place. The matter will do more mischief by being allowed to lodge. Counter openings in dependent positions, and free incisions either in the vicinity or if necessary *through the capsule, should be promptly and boldly practised*. Ankylosis is the happiest result that can be looked for, and the patient who so escapes has reason to be well satisfied that he has lost only the motion of a joint, instead of a limb or his life, or as frequently must happen, the one first and the other afterwards."

In No X of Guy's Hospital Reports there is a case recorded, which is alluded to by Mr. Alcock, so very similar to the condition our patient would have been in provided that the advice to remove the patella had been followed, that I cannot forbear to quote it. It will answer remarkably well as a closing argument for the side we are advocating. "The patient was under the care of Mr. Ward of Huntington. The knee joint was laid open by the contents of a fowling piece, and a great part of the patella shot away. A poultice was applied, and *no unfavorable symptoms* either local or constitutional occurred during the progress of the case. The remaining small portion of the patella was subsequently removed. In three months the wound was healed.

"Eventually, considerable motion of the joint was gained. The cicatrix by its firmness or cartilaginous structure seems to have supplied the place of patella, and the patient walked well without crutches."

I would *now* not merely repeat the question, whether ankylosis and restoration to health might not have been effected in our patient by the removal of the patella, but I am tempted to ask if there would not have been, as in the case just copied, good hopes of a flexible and useful joint?

Since the above was written we are happy to find that the

treatment of suppurative joints by free incisions has been sanctioned by Mr. Brodie in the *last* edition of his book on the Joints, and by Mr. Skey in his late work on Operative Surgery. Mr. Gay has also done much to bring this treatment into favorable notice. Their united testimony, if not conclusive, is of very great weight.

My next and last case was one of suppuration in the joint, without any external opening. During the year 1850, I was invited to see a case in the hands of another practitioner, where the patient had at some time previously met with a fracture of the patella, and where considerable space had existed between the separated fragments. Recently he had wrenched the knee again, and great swelling had followed, which had extended five to six inches above the usual seat of the patella. Some but not excessive constitutional excitement arose, and the integuments were tense, red, and shining. The surgeon in attendance had opened it, and serum, with pus, and some flocculent masses were discharged. Most all who saw the case believed the joint to have been opened, but there was evidently an opinion entertained by some that the swelling existed in the loose cellular tissue under the rectus tendon, and not in the joint itself. The patient, however, did very well, and gradually recovered as good use of the joint as he had possessed before the injury.

I felt confident in this case that the knee joint had been opened, and for the following reasons. The man had met with a fractured patella, and undoubtedly at this time the synovial membrane was lacerated, as must invariably be the case when the patella is broken. Subsequently he sprained his knee, and at the time probably tore the capsule again from the attachments it had formed with the broken ends of the patella. Inflammation followed and the whole joint became distended.

One source of error then is the difficulty in distinguishing between effusion *in* and effusion *about* a joint. Effusion into a joint, especially if there is no other disease, is ascertained by the fluctuation felt on depressing the patella as in *hydrops articuli*. But if there is other disease this sensation may not be felt. In the above case fluctuation could not be detected under the broken fragments of the patella, yet the swelling on

the sides of the patella was sufficient to lead us to believe that the effusion was in the joint. M. Lisfranc has indeed stated that effusion into and about the joint may exist together; but they must be very rare, and only I believe in complication with scrofulous disease. If we would only examine the synovial membrane upon the dead body, we shall find that it extends naturally from two and a half to three inches above the upper surface of the patella, and that on pressure it is very distensible, so as easily to be made to mount much higher, as it must do whenever the capsule is full of fluid.

With regard to the treatment resorted to, we must confess, that knowing as we now know, that the joint contained pus, we highly approve of it. It is admitted by Dr. Burns, that in synovitis, "if the secretion is more rapid than usual, the skin becomes smooth and shining from distention, then red, and after a lapse of more or less time the articular abscess bursts." Mr. Brodie mentions an instance where this happened—a case also lately occurred at the Bellevue Hospital. Now the above case was exactly in this condition—red, shining, and distended; and the surgeon only anticipated the action of nature in making an opening. He even acted wisely in doing so, for if left to burst of itself it might have discharged externally, and if so, fortunately for the patient; or it might have burst into the loose cellular membrane under the rectus tendon, and then all the dangers which it has been one of the chief objects of this paper to indicate might have ensued.

But we may hesitate to open a joint unless we are satisfied that it contains pus. Its presence may be suspected from the distention, shining, and redness, and this suspicion will be confirmed if there are chills and a frequent pulse. Still we may doubt, and wish, as we ought, to act with extreme prudence; then we must make use of the test recommended by Mr. Brodie, in the last edition of his book published in 1850, and make a puncture with a grooved needle before making the incision.

We have now ascertained that acute synovial inflammation with purulent effusion is not limited to those cases where the capsule is punctured or lacerated with the integuments; but that it may arise in *scrofulous knees*, where inflammation

and ulceration have been transmitted from the indurated tissues to the synovial capsule; that it may be *consecutive upon ulceration of the cartilages*, whether inflammation or caries exists or not in the heads of the bones; that it *may be caused by a carious patella, or by sprains of the joint.*

The peculiar dangers to life and limb need not again be repeated, they can be seen from what I have already said. I would, however, in closing, offer the following practical considerations:—

An abscess in a joint should be treated like an abscess in any other part of the body. If there is any doubt of the diagnosis being correct, we should make a puncture with a grooved needle before making an incision.

If a carious patella exists, we should watch our patient with much anxiety, fearing that inflammation and suppuration of the synovial membrane may come on at any moment. If the caries is superficial, we may wait awhile, for possibly this diseased action may cease and the wound heal. If, however, it seems to involve the whole thickness of the patella, we should remove the patella, although by doing so we should open the knee joint. At any rate, if we should hesitate to do this before ulceration of the synovial capsule has taken place, there can be no reason for delay after this event has happened.

Remembering always that a small opening is extremely dangerous, we need not fear to remove the patella, and by a proper position allow the matter to drain away as fast as it forms.

In such cases we must expect only an anchylosed limb; but this is better than amputation or death.

When, in the course of scrofulous disease, the synovial capsule becomes ulcerated opposite to the joint, so as to discharge externally, we ought to enlarge this opening in order to allow the matter to flow freely away. We shall thus prevent it from distending the capsule so as to cause perforation at some other part, which would be followed by suppuration of the cellular membrane under the tendons, and extensive burrowing of matter between the muscles, to the great danger to the life of the patient.

When the synovial membrane has once opened externally,

and where, from the smallness of the opening or other cause, a new opening has formed, and the matter in the joint been effused under the rectus tendon, we might be perplexed in deciding how to act. Amputation would, undoubtedly, deserve due consideration; but perhaps the patient's condition would preclude its performance. In this case we would wait and endeavor to remedy the evils as much as possible, by changing the position of the limb, so that the foot should be more dependent than the body, and bandage from the foot towards the patella so as to prevent œdema and the descent of the matter down the leg; also bandage the thigh from above downwards, and since the matter is accumulated under the rectus tendon, and is apt to be conducted along it up the thigh, we would make an incision on each side of the tendon, and perhaps pass a seton to intersect and drain off the matter.

If the synovial abscess should have effused its contents under the rectus tendon only, and not have broken outwardly, a large abscess would form in the thigh, attended, probably, with great constitutional suffering. If we should make an opening, the admission of air might make matters worse. In such a case amputation should be thought of, or if this should seem premature or unsuited to the enfeebled state of the patient's health, we would make as free openings as possible, and by managing with bandages, &c. as just suggested, and by supporting the patient's strength, be ready to amputate if we should find it necessary or proper.

ART. III.—*Medical Notes and Observations.* By an EX-HOUSE-SURGEON. No. I.

MR. EDITOR: The following notes of cases, and of the reflections and inferences suggested by them, were penned during a service as Resident Surgeon in the New-York Hospital. They are now presented for publication, in a somewhat desultory manner, it is true, but still valuable, individually, it is hoped. as facts recorded at the bedside, and inferences deduced from these facts while still under observation—unwarped by preconceived notions or pet theories. Therefore, where they may appear to conflict with writers of authority, I shall not consider

any apology due, or any explanation necessary. In medicine, it is not uncommon to find the facts elicited at the bedside entirely at variance with the teachings and writings of our great authorities, who, too often, instead of recording their own well-digested observations, introduce the written opinions of previous authors in a new shape, and thus transmit errors from book to book, and from generation to generation. Not only is this the case in works on pathology and treatment, but in what purports to be the record of stern anatomical facts; the statement, in particular cases, being, very evidently, not derived from personal dissection and examination of the parts described, but from the dictum of a preceding author; a labor-saving plan certainly, but one not calculated to give us an exalted idea of the industry and research of medical authors. A striking example of this may be found in the anatomy of the *vertebral column* as it is found described in all the works on anatomy. Speaking of the causes of the various curvatures of this column, anatomists tell us that the convexity of the *cervical* portion is owing to the fact that the vertical diameter of the bodies of the *cervical* vertebræ is greater anteriorly than posteriorly. This is an easy and very natural explanation, but it is *not* a fact that the anterior is greater than the posterior diameter in this division of the spine, at least, so far as our dissections have progressed, the reverse being the case. The cause of the convexity lies not in the peculiarity of the bones, but of the *intervertebral substance*, this being thicker before than behind. We might mention many other similar instances, but none quite so glaring. If you should regard the following pages, Mr. Editor, of sufficient importance to merit a place in your journal, they are at your service.

FRED. D. LENTE, M. D.,
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It has fallen to my lot to see a great deal of *syphilis*, in all its various forms—primary, secondary, tertiary, and hereditary; and to witness the fact that, although a wonderful improvement has been made in its treatment since the days of Hunter and Swediaur, to go no farther back, there still remains great room for improvement.

Paris may be looked upon as the head-quarters of this disease, but no place affords a better field for its study than New-York, if its proper haunts are diligently sought out. It is stated in a scientific work on "Prostitution," published in Edinburgh by a physician attached to one of its hospitals, who institutes a comparison between his own city and London, Paris, and New-York, that it is more prevalent in the latter city than in Paris, and in Paris more than in London or Edinburgh. His conclusion is based upon a most diligent research into the condition of his own city in this respect, and upon the most reliable information which he was able to acquire from others as to the condition of foreign cities. His statistics of New-York are derived mainly from a minister of religion here; but however extensive his opportunities for practical information in this particular may have been, and however much his character for veracity and judgment is to be depended on, (and I know nothing against it,) I should doubt the correctness of his assertion. That prostitution is as rife in New-York, however, *in comparison with population*, as any where, I fully believe, and statistics proving the truth of this could easily be collected. Where prostitution is rife, disease must be rife, and it must be more so here, in proportion, than in Paris; for there, by a wise regulation of police, a medical surveillance is held over the sanitary condition of professional prostitutes, which it would be wise for every large city to copy,—thus curtailing by law the direful consequences of an evil which *cannot* be abolished by law. Of *all* the sources of improvement in the study of the *venereal* disease in this country, the New-York Hospital offers the most fertile by far. There, a large portion of one of the surgical departments is devoted almost exclusively to this disease, and its kindred affection, gonorrhœa; while cases of interest are always to be found in the other surgical departments, and in other wards of this. Among the class of patients admitted to the Marine Building which includes the venereal wards—sailors and boatmen, as might be inferred—the worst forms of the disease are met with. They are constantly exposed to contagion, while they are constitutionally and habitually careless, and it is not uncommon for them to regard a sloughing chancre as large as

a shilling piece as of small importance. This carelessness, together with the fact that they frequently apply to the venereal quacks, who infest a certain quarter of the city like locusts and vultures, previous to entering the hospital, causes these unfortunate victims to present, in their persons, the most horrible forms of this loathsome disease, and a constant certificate of the ill effects of the *abuse* of mercury, which is the panacea of these venereal empirics, or "pox doctors" as they are familiarly termed, in all the various forms and stages of *syphilis*.

Every one who has examined the history of the venereal disease from its origin, whatever that origin may have been, to the present time, or who has even watched its progress for only a few years,—who has noted the terrible ravages which it once made on human health and life, exceeding in loathsomeness and fatality even the Plague itself, must be conscious of the fact that it has progressively abated in virulence; that some of the forms of *sloughing* and *phagedenic chancre*, which were formerly so common, are now rarely seen; and that, from some cause or association of causes, the disease is gradually assuming a far milder type, and perhaps wearing itself out. This happy event is, no doubt, due to more causes than one: to greater cleanliness of the populations generally, for one; to the advance of civilization, which, however, may include the one last mentioned; but, more than all combined, we think, to *improvement in its medical treatment*, and, the principal improvement, *restriction and discrimination in the employment of mercury*—its total abandonment by many practitioners of eminence and experience, and its partial abandonment by most others in the treatment of the primary forms of the disease, both curative and prophylactic. We shall offer some considerations and facts bearing strongly upon this point as we proceed.

Mr. Christophers, in the January, 1852, number of the London Lancet, observes:

"The *first* step that tended to infringe on the ancient mode of treating syphilis—a disease then thought to be amenable to mercury, and to mercury only—was certainly due to the solution of the question of the non-identity of the two poisons of syphilis and gonorrhœa, and to the treatment resulting.

"The *second*,—to army surgeons, to Broussais, and to the introduction of what is called simple treatment, thereby proving the possibility of *curing every genital sore without the use of mercury*.

"The *third* step,—to M. Ricord, aided by inoculation, showing that chancre, in its first stage, is strictly *a local disease*.

"The *fourth* step,—to the introduction of iodine and its preparations in the treatment of *secondary and tertiary* symptoms.

"The *fifth* step,—to the recognition of primary phagedenic, as distinguished from the common or benign form of chancre, and the treatment resulting (Carmichael).

"The *sixth* step,—to the treatment of the local sore, and to the means adopted for the *early healing* of the same; for the longer the primary sore remains unhealed, the more severe the supervening secondary affection becomes.

"The *seventh* step,—to determining the non-contagiousness of the secondary and tertiary symptoms, and to distinguishing therefrom *warts*, certain kinds of *condylomata*, &c., that are communicable.

"The *eighth* step,—to the determination of some of the laws that appear to preside over *hereditary* syphilis: among the rest, the showing that to administer mercury to parents laboring under secondary symptoms does not prevent contamination accruing to their offspring; the determining, moreover, the futility of administering it to patients laboring under what is termed tertiary symptoms, with the same view, inasmuch as tertiary symptoms are *incapable* of being transmitted by hereditary disposition, this being considered by M. Ricord their characteristic mark."

To the first four steps of Mr. Christophers, is, no doubt, due most of the beneficial change which has been made in the management and results of syphilis.

Of Phymosis, with concealed Chancres.—When an abundant syphylitic discharge is seen issuing from the preputial orifice, and the prepuce itself in a state of phymosis, it becomes a question whether this portion of the integument of the penis shall be divided so as to admit applications directly to the

chancre, or whether detergent and medicinal injections shall be depended upon. From what we have seen, we prefer, as a general rule, the former. Many surgeons object to this on the ground that the cut edges of the prepuce are apt to become inoculated with the chancrous matter, and thus new, and perhaps more extensive, chancres be produced. Theoretically, this objection appears well grounded, but, in practice, I have not found it so. I have frequently divided the prepuce when there were chancres on its inner surface, or on the glans, discharging an abundance of matter, and I have seen others perform the same operation repeatedly, under the same circumstances; and I do not remember to have seen but one case where inoculation of the cut edges took place. It has commonly healed with remarkable rapidity. In several instances, where the chancres have been attended with excessive inflammation of the penis, and the glans or the prepuce in a gangrenous state, or approaching it, I have seen the cut edges of the prepuce *slough*, and a large portion of it lost by the sloughing process; but this did not result from the wound "taking on a chancrous character;" but from the inflamed condition of the parts, and in all these cases, it has been obvious that the incision has been of great service, not only in exposing the sore, but by relieving tension, and depleting the parts, thus preventing a more extensive destruction of tissue. In similar cases, where the opposite plan has been preferred, and the prepuce has not been divided, it has generally sloughed extensively, and it has not unfrequently happened that the sloughing has not been satisfied with destroying the prepuce, but has invaded other portions of the penis, committing the most extensive devastation of tissue, and, in a few cases, invading the abdomen, and either producing a horrible death, or rendering the patient a miserable specimen of mutilated humanity. We do not mean to say that these deplorable results occurred *in consequence* of the non-performance of the operation, for we know full well that cases occasionally occur where the combined and best directed skill of several surgeons has failed to arrest the sloughing process; but we have very seldom failed to effect this in cases where an early division of the prepuce has been a part of the treatment. For if the sloughing of a chancrous sore once gets under full

headway, and the constitutional effects of it once become seated, we have one of the most difficult and dangerous of all the forms and phases of this protean disease to contend with.

When the prepuce has been freely divided, especially when the division has been made upon the dorsum, there sometimes remains, at the end of the treatment, a rather unsightly bag at the end of the penis, which does not conceal the upper part of the glans. Some patients prefer to have this excised, for the sake of symmetry, or, as they suppose, to prevent difficulty in coition. But, generally, if left to time, it seems to have shrunk away, so as not to have been noticeable as a deformity, or to present any impediment to intercourse.

Of Buboës.—It is the common practice of surgeons to endeavor to “discuss” syphilitic buboes, that is, to promote their absorption before they have gone on to suppuration; and Wallace says, that even after they have proceeded to suppuration, their absorption and entire disappearance may be frequently effected. It is the equally common *opinion* of the patients themselves that these buboes should not be discussed or *driven in*, as they, not incorrectly, express it, from an idea that the system will thus be exposed to greater danger of a secondary visitation of the disease. And they often form a not very flattering opinion of our treatment, when we have, much to our own satisfaction, been so fortunate as to effect the absorption of a large bubo. This extra-professional idea is generally treated as ridiculous, and the “driving in” of the bubo is always regarded as “a consummation devoutly to be wished for.” But, upon reflection, and inference from what occurs in other diseases attended with these glandular enlargements, the idea appears to be far from absurd. What is a bubo? A bubo is simply a swollen and inflamed lymphatic gland, and occurs from a variety of causes. A syphilitic bubo, which is called “a bubo” *par excellence*, is a gland inflamed by the introduction of the specific virus of syphilis. Now, to understand the nature and therapeutic indications of syphilitic bubo, it is necessary to inquire first as to the office of the lymphatic glands. They appear to act as sentinels to the system, to prevent its contamination by poisonous or noxious matter applied to the

surface. For such matter being taken up by the absorbent vessels, is carried to the lymphatic glands, and there its noxious properties are eliminated or expended, the glands becoming diseased, but the absorption proceeding no farther. Not that this is always the case, but it is so, unless the poison be extremely virulent, or in great excess. A number of observed facts seem to corroborate this supposition. Thus, in chancres upon the penis, when the glands in the groin become affected, forming buboes, it is found by observation, that the system is much more likely to escape secondary symptoms than in cases where these glands remain intact. (See Wallace and other writers on the venereal disease.) Again, when *post mortem* matter is by chance introduced under the cuticle during dissection, how often do we find the matter absorbed, carried along the lymphatics, which become inflamed, to the *glands* in the axilla, which also become inflamed; but how seldom do we find the absorption proceed any farther. And it is not always nor generally because its progress is arrested by treatment, that it proceeds no further; for it frequently goes on from the point of insertion with rapidity, and before any treatment is applied to the glands which become violently inflamed in a few hours. But here the inflammation ceases, or is *kept in check*, until remedies may have time to act in preventing the general contamination of the system.

In external *cancerous affections* also, if these affections, in their inception, be considered local, the lymphatic glands first become affected, and give the alarm that the system is in danger of contamination.

In that terrible scourge of former times, the plague, it was uniformly noticed that those patients, in whom the buboes made their appearance early, were most likely to recover, the disease seeming to expend its violence upon the glands. "Buboes," says Dr. Good, speaking of the plague, "in the opinion of all the practical writers, or nearly without an exception, are a critical mark of the disease, and the *natural means of conducting it to a favorable termination.*" "In many instances," says a celebrated writer on the subject, "they neither inflame nor become painful; in others they suddenly disappear after having reached the size of walnuts. In the former cases, they

afford *no relief*; in the latter, *death is almost sure to follow speedily.*" And again, "Upon a free suppuration, they certainly render the patient less susceptible of the disease afterward." In the opinion of M. Sotira, and indeed of most of the French medical staff appointed to the Egyptian expedition, they prove *an indemnity for life.*"

Now, reasoning from analogy, it would really seem that the syphilitic bubo is a safety-valve for preventing the reappearance of the disease, and instead of being regarded as an unwelcome complication, ought to be looked upon as a favorable event in the progress of the disease, and its suppuration promoted, instead of retarded or prevented. At all events, by so doing, the duration of the patient's confinement will be cut short one, two, or three weeks, for we frequently lose so much time in fighting with a bubo by leeches, blisters, compression, &c., when it finally, and in spite of us, proceeds to suppuration. And perhaps we have all this time been contending against a salutary effort of nature to eradicate a loathsome disease from the system. In cases, where the patient has earnestly desired the speedy cure of a bubo, or where circumstances have rendered it desirable, the following means have been found very efficient. Repeated blisters, dressed with the ungt. hydrarg. and the application of a compress and spica, or of caustic potash, to produce a slough. These means are particularly applicable to long standing, and indurated buboes, which give but little inconvenience to the patient except from the fear that they may lead to something dangerous. The same means will, however, succeed equally well with inflamed buboes, if the inflammation have not gone on to suppuration.

We sometimes see buboes in the groin, in the situation of the inguinal glands, where there is no sign of chancre on the penis, or any where else, of there ever having been one, and when the patient solemnly asseverates that none have ever existed, and without any discharge from the urethra, or tenderness along its course. These buboes follow the same course as ordinary syphilitic buboes. A case of this kind, I call to mind in the person of an Irish emigrant, who was admitted to the hospital, sick of ship fever, immediately on his arrival; two weeks after his admission, and when he was convalescing

from his illness, but unable to leave his bed, a bubo appeared in the groin in the usual situation of a syphilitic bubo, and followed the same tedious course—no chancre, no cicatrix, and no urethral discharge; and the patient stated that he had never enjoyed connection with a female.

The use of mercury in the primary stage of syphilis.—In chancre unconnected with any induration, and indurated chancres are not now of very common occurrence, the treatment will almost always be as speedy and successful without the internal administration of mercury, as with it. Cauterization, and the subsequent application of a stimulating lotion, as Labarraque's solution diluted, will generally suffice; or, if it does not, the *local* application of mercury, in the form of black or yellow wash, or, in some cases the ungt. hyd., or hydrarg. proto-iodide will effect a cure. Sometimes repeated cauterization with argent. nitrat. or acid. nit., or better still the acid nitrate of mercury, is necessary. This latter caustic appears to have a specific action on the chancre, as it also has on syphilitic warts; the blighting effect on the whole mass, causing it gradually to shrink away, being far more efficient, than the successive destruction of superficial layers by its caustic action. If inflammation be present, an antiphlogistic treatment constitutionally and locally must, of course, be premised. If the chancre be not more than a few days old, the above treatment will probably always be successful, and speedily so; but, if it have existed for weeks or months, and especially if it be attended with a hard base, mercury, in the form of blue pill will generally be necessary; though it is not always necessary to touch the gums; and it seems to act more mildly and with equal efficiency on the system when combined with small portions of tartarized antimony and opium. I have frequently used a pill composed of hydrarg. pil. grs. iij., opii. gr. $\frac{1}{4}$, ant. tart. gr. $\frac{1}{6}$, bis aut ter die. And, in case of much induration about the chancre, and where an indurated, and not inflamed bubo attends the chancre, time will be gained by commencing the mercurial treatment early by means of this pill or a similar combination. When there is any obvious indication for mercury, then it is proper to give it, and induration will not generally be entirely removed with-

out it. When the induration has nearly disappeared, or when it becomes evident that mercury will not remove it, as is sometimes the case, then it is time to stop.

The use of mercury in the secondary stage of syphilis.—In many of the forms of secondary syphilis, mercury acts as a specific, and cannot advantageously be replaced by any other medicine. In the secondary eruptions of all kinds, the diseases of the testicle, the ulcers of the fauces, and indeed in all the *secondary* diseases properly so called, mercury is the remedy which appears to act most speedily, and certainly on the system. Take, for instance, one of the worst, perhaps the worst forms of secondary disease, rupia; take a man covered with these foul ulcers, broken down by cutaneous irritation and quack medicaments, and even in such a case, a cautious use of hydrarg., bichlor., combined with tinct. cinch., perhaps opium, will have an excellent effect. The peculiar preparation of mercury employed in this stage is of great importance. Calomel and blue pill weaken the system, and have but little effect on the disease; while the remedy first mentioned, or the iodide or biniodide of mercury, have almost uniformly a salutary effect. Calomel is however necessary in one form of secondary syphilis, iritis; in which it is necessary to induce the mercurial action on the system more rapidly than can be done by any of the above remedies.

Of mercury as a prophylactic, or preventive of Secondary Syphilis.—One of the worst features of the venereal disease is its liability to return after its cure, or disappearance from the surface of the body. To eradicate the poison from the system, so as to destroy this liability, has therefore always been the most important point in the management of the primary disease. To effect this desirable result, mercury has, until of late, been almost universally regarded as by far the most powerful, if not the only means. But the progress of medical science, the gradual decline of ancient prejudices, and the recent researches of eminent and practical surgeons in various parts of the world, have tended to shake our confidence very materially in the efficacy of this agent. So we shall not be deemed silly, perhaps, if we commence our remarks on this portion of the subject, by asking—What effect has mercury in preventing

secondary syphilis? It is a question more easily asked than answered. Has it any such effect? Even this, after a careful examination of the question, both in the writings of the authorities, and in the wards of the hospital, we are not prepared to answer definitely. It is always difficult to obtain reliable statistics on the subject. We are generally obliged to depend on the statements of the patients themselves, and persons suffering from this disease are often such as cannot be depended upon for veracity. They sometimes deny that they have ever had the primary disease, when the secondary symptoms are upon them in an unmistakable form, or when the characteristic cicatrices of chancres and buboes are distinctly visible. Still, from what personal experience we have had, and from the recorded experience of others, especially that of the English army surgeons at home and abroad, whose statistics are certainly most reliable on this point, we have been able to arrive at the conclusion, that mercury, when given with no definite object, but the prevention of secondary symptoms, and continued for weeks, does more harm than good, often producing or aggravating the disease, even when administered *secundum artem*, and with a due regard to *time, stage of the disease, and constitution* of the patient. And we are certainly unable to say positively that we have ever seen one case rendered proof against secondary symptoms by taking mercury; while we can give several, in which secondary symptoms were originated by mercury, and a number in which this agent materially aggravated the disease.* In this we are not alone, such cases being referred to by Sir Benj. Brodie, Liston, Guthrie, and many other eminent men, all advocates of the prophylactic use of mercury. Indeed, we have been struck, on examining the works of the great writers and lecturers on syphilis, with the fact, that the strongest evidence of the inutility and injuriousness of mercury, when used as a preventive, is to be drawn

* Mr. Lawrence, who is an advocate of the prophylactic use of mercury, admits that it is by no means certain, that a prolonged course has the effect of preventing contamination of the system, and states that he finds little to assist him on this point in consulting the best writers.—CHELIUS, *Surgery*, vol. 2, p. 87.

from the recorded experience of those who practised and advocated its employment. Witness Wallace, one of the best and most systematic writers on syphilis (excepting one heresy), and who is a strong advocate of the prophylactic treatment. After advising mercury in all cases where the circumstances of the patient will admit, with a view to prevent secondary symptoms, he says, speaking of patients among the lower classes, who are exposed, during the treatment, to the inclemency of the weather,—“In cases of this kind, I generally confine my treatment to them (topical applications), in conjunction with the internal use of nitrous acid, and, by these means, I succeed, for the most part, *in healing the disease with rapidity*. Cases treated in this way are also *very seldom* followed by *secondary symptoms*.” “Whether this be owing to the topical application of mercury and caustic, or to the internal employment of the acid, I cannot, as yet, pretend to say decidedly, but probably both contribute.” p. 113. Here he admits that, even in his worst class of patients, the treatment without the internal use of mercury is followed generally by rapid cures, and that secondary symptoms seldom follow. What more can be said in favor of the mercurial treatment? and yet he advises mercury to be given when circumstances admit it. Ricord, the best modern authority in venereal diseases, says,—“I have never seen a chancre destroyed during the first week of its existence, afterward give rise to secondary symptoms.” We have then a large class of cases, wherein it is obviously improper to administer mercury. Again, he says,—“It is only the *indurated chancre* which is capable of giving rise to secondary syphilis.” This excludes another still larger class of cases. For, in these days, it is rather more common to have chancre without than with induration; and the chancre, which is technically called *indurated*, or the Hunterian chancre, is comparatively rarely seen. If to these we add the cases in which the chancre is phagedenic, or rapid in its progress from the commencement, and the cases of sloughing chancre, in all of which it is almost universally admitted that secondary symptoms rarely follow, we have the evidence of no less a personage than Ricord against the prophylactic use of mercury in, at least, a majority of cases of primary syphilis; and con-

structive evidence almost as strong may be drawn from the writings of Sir Benjamin Brodie, Mr. Guthrie, Mr. Liston, all authorities of the first rank, and all advocates of mercury. While the testimony of those opposed to the use of mercury is, of course, still stronger. To mention only a few instances, for we have not the time, and would not presume to ask the space to sum up all the evidence which is at our disposal. Mr. Rose, an English army surgeon, treated all the syphilitic patients which came under his charge for two years, (and the number was very large), without mercury. Sir B. Brodie says,—“I saw these cases, and every now and then, watched their progress with him (Mr. Rose). Every sore upon the organs of generation was cured under his management, without the aid of this agent” (mercury). And he further states that—“the hardness, which was left behind, disappeared without resort to mercury.” “Many of the patients,” he goes on to say, “*never had secondary symptoms*. Which may, however, be attributed to the sore not having been venereal. In some cases, where secondary symptoms appeared, they were slight, in others severe, exhibiting their usual character. Whatever they were, they *yielded without mercury*. Other army surgeons repeated these experiments, and arrived at the same results.” “With respect, however, to recovery from syphilis,” Sir Benjamin continues, “without the aid of mercury, I do not believe you can apply a rule drawn from the observation of what occurs in soldiers to society at large.” Nevertheless, the valuable testimony of Sir B. Brodie in this case proves this much, that secondary symptoms did not come on more frequently in these cases than among those treated by mercury. Mr. Newbigging, physician to a venereal hospital in Edinburgh, treated upwards of six hundred cases without mercury, and he draws the following conclusions from his trial: “1st. That the venereal disease is curable without the employment of mercury. 2d, That the duration of treatment is shorter than when mercury is employed. And, 3d, That the *cases of secondary symptoms* supervening after the simple method, are *less frequent* and *not so serious* in their nature as under the mercurial system.” But this gentleman is still an advocate for the use of mercury in primary and secondary syphilis, when there is a definite object to be gained by it.

We have said that mercury originates the symptoms usually attributed to secondary syphilis, and aggravates them when they are present: and we now present some examples, not only from our own experience, but from that of the celebrated authorities before alluded to. Sir Benjamin Brodie says, in criticising Mr. Rose's treatment, "I know that, in patients treated by mercury, there is a greater chance of disease of the bones than there was in Mr. Rose's patients, to whom it was not exhibited; and I know that when given for liver complaints, and for diseased testicles, it may *produce* nodes." Mr. Liston says: "Long continuance of a mercurial course predisposes to periostitis; and exposure to cold, while a patient is undergoing that medicine, is a frequent cause of periostitis." In January, 1851, there were two cases of nodes under my charge in ward 3 of the marine building of the New-York Hospital: one, a very respectable middle-aged Scotchman, named McKennon, had large nodes on his skull. He strongly asserted his innocence of any venereal taint, and there were no vestiges of it to be found on his body. He stated that he had suffered an attack of fever on the Mississippi River, and that he had been dosed with immense quantities of calomel—teaspoonful doses. The other patient was a boatman on the Hudson, and an old acquaintance in the hospital, being a notorious votary of Venus. He had been twice treated for the primary disease in the hospital, and both times by mercury carried to the usual extent, with a view to prevent secondary attacks. He had large nodes on his tibia, and one on the left ulna. Both these cases were treated in the same manner: that is, by the internal administration of the iodide of potassium, and the local application of the tinct. of iodine, and both perfectly recovered. These are instructive cases: one showing that mercury is capable of giving rise to symptoms not to be distinguished from those ascribed to secondary syphilis; the other, that the same symptoms may occur after primary syphilis has been treated by mercury with a view to prevent them. In the latter case, it is impossible to say whether the affection is syphilitic or mercurial.

Here is another case in point. Patrick O'Brien, a healthy-looking Irishman, aged 35, under treatment in ward 15, main

building, for syphilitic ulceration of the throat of a severe character, was thoroughly mercurialized by minute doses of hydrarg. bichlor. and by mercurial fumigations. After he had been in this condition for some days, was attacked with a furious secondary iritis, which yielded completely, though slowly, to the iodide of potassium, which medicine appears to have the power of counteracting the evil effects of mercury. We not unfrequently have patients return to the hospital months after an attack of primary syphilis, for which they were thoroughly mercurialized, with secondary symptoms, though they deny any fresh infection. On the other hand, cases that have never taken mercury in the primary disease, have entirely escaped the secondary, at least for two or three years, or as long as the observation of the physician has extended.

A surgeon in the U. S. navy informs me, that he never uses mercury on board ship in any form of primary syphilis, and he rarely sees secondary symptoms ensue during the voyage, which sometimes extends to three years.

We have the evidence also of Sir Charles Bell that mercury will give rise to worse symptoms and more intractable diseases than that which it is intended to prevent. He says (*Institutes of Surgery*), "I have often repeated to you, after Mr. Hunter, that mercury will produce scrofula. What then more likely to occur than that, after the specific action of syphilis is subdued through the influence of mercury, a *scrofulous dathesis* should supervene, and that you should have a scrofulous gland rather than a bubo to treat 'in the long-run.'" Yet, in the next paragraph but one, he adds: "Do not be satisfied, when there is a deep ulcer in the palate, with less than a course of mercury properly conducted for six or eight weeks." Again he says: "By long confinement and a course of mercury, your patient is like a hot-house plant, which a breeze may nip." Yet, he asks—"Is there any experienced senior in the profession, who, having a son of eighteen or twenty, and that son having a chancre, that would treat him without mercury? No! there is not such an unnatural person." But we will not, at present, pursue the inconsistencies of the advocates of mercury any further, nor accumulate the testimony which they

inadvertently present against the agent which they so strongly recommend.

Admitting that mercury *does* act as a prophylactic, we would ask, *how* does it so act? No one can tell; no one can form a respectable idea; but we go on giving it in case after case, from habit, and because it is traditionally handed down to us by our forefathers in medicine, that it *will* prevent secondary syphilis. Some have *supposed* that it acted chemically, and neutralized any syphilitic matter present in the system, by the formation of a third and inert substance. "It has been further supposed that it is by the disengagement of oxygen, which the various preparations of mercury introduce into the system, that the effect is accomplished." Mr. Hunter supposed that it acted as a preventive "by exciting a new and peculiar action in the system, whereby the syphilitic action is destroyed;" that is to say, homœopathically, *Similia similibus curantur*.

We object to the employment of mercury with a view to prevent the occurrence of secondary symptoms on six grounds.

First. It is not proved that it *ever* does act as a preventive. Nor can any of its warmest and wisest advocates explain *how* or *why* it does so act.

Secondly. It is proved, and admitted by almost all writers on mercury, and on syphilis, that this agent not only often precipitates and aggravates secondary symptoms, but actually originates them, or produces them when the primary disease would not have done so.

Thirdly. It is well known that there are constitutions which will not bear the administration of mercury in any stage of the disease; but in which, this agent, instead of acting as a remedy, is converted into a poison, and it is impossible for the most astute physician to ascertain that such an idiosyncrasy exists until the evil has been consummated.

Fourthly. It is shown by the researches of medical writers on this subject, that only a proportion of those affected with primary syphilis are ever troubled with secondary symptoms (one in ten, according to Guthrie). Therefore we may be introducing a dangerous and often uncontrollable agent into the system, to ward off an evil which may, with strong probability, never appear.

Fifthly. We think that it is shown, by a careful examination of different writers on syphilis, even those who employ mercury as a prophylactic, that at least *as many* recover without the occurrence of secondary symptoms, when mercury is not employed as when it is.

Sixthly. If we employ mercury as a preventive, we never can be sure that we have carried our mercurial treatment far enough, or that we have not carried it too far; for it is admitted on all sides, that there is no criterion. Different rules are given by each individual writer. It is, too, often as Sir Chas. Bell says, "A certain number of dozens of pills, a certain weight of mercurial ointment is used, and that is the whole rule of many practitioners." It is admitted by most writers, that *ptyalism* is not an indication that the system has been sufficiently impregnated with the mercurial influence, and equally so that no definite period of time can be laid down, in which the constitution may be supposed to be sufficiently affected, though some vague general rules to this effect are given by most of them.

We gain this much by not employing mercury as a prophylactic. We curtail the average duration of the treatment about one-half, for a chancre can often be healed, and an incipient bubo discussed in one or two weeks, and then we consider the patient cured. Whereas, under the prophylactic treatment, he must remain under medicine six weeks longer; and he must, after this, pay the utmost attention to his diet and exposure for about an equal length of time. In the one case, we have only to fear the after effects of the disease; in the other, we dread not only these, but the evils of a mercurial cachexia, which are worse, or of both combined.

We have, thus, Mr. Editor, expressed our convictions and doubts with regard to the mercurial treatment of syphilis, based upon a somewhat extensive experience in the disease, and upon a careful perusal of what has been written on the subject by others greater than ourself. We hope that some day these doubts may, through the labor and further experience of future writers, be removed, and these convictions dissipated, should they prove unsound.

"Little remains to add," if I may be permitted to use the

appropriate language of another, "save for me to express the hope that any attempt, however humble, tending to elucidate the laws which govern, and to point to the treatment best suited to a disease which may be infinitely reproduced by the sufferer, while it is perpetuated in his offspring—a disease which, though it spare, for the most part, organs essential to life, directs its violence against the more ornamental parts of the human frame, the skin, the eye, the hair, the throat, the organ of voice, being among the structures usually invaded, while the exposed portions, the face, the hand, the nose, from its favorable locality—a disease which fixes its stamp on a man like a plague-spot, pointing him out to his neighbor, and making him feel he has placed himself, for the time being, without the pale of society. An attempt, however humble, I repeat, to add to our means of preventing or treating a disease fraught with such dire calamity, may, it is hoped, be received with consideration for the intention's sake; and further, that the magnitude of the object may, in a measure, atone for the deficiency of the performance."

ART. IV.—*Membranous Croup successfully treated by Tracheotomy.*

BY DANIEL AYRES, M. D., one of the Surgeons to the Brooklyn City Hospital.

To the unprofessional observer *all* forms of croup are identical. The special attention of medical students, and the practical observation of most physicians is confined to two varieties.

1st. False or spasmodic croup is attended with little more disease of the larynx and air-passages than disordered functions. It is generally a secondary or symptomatic disease; short in its duration, and amenable to very simple treatment.

2d. True, or membranous croup, is an inflammatory disease, attended with fever. Commencing in the larynx, trachea, or bronchial tubes, it may extend to the lungs or even pleura, and is characterized by the effusion of tough plastic material into these passages, thereby preventing the ingress of air, and proper aeration of the blood. It requires active antiphlogistic and emetic treatment, but unfortunately is generally fatal.

A 3d variety called follicular stomatitis or diphtheritis, is a well-marked form of disease often confounded with the second variety; but whilst it differs therefrom in the locality of its origin, strongly resembles it in the mode of invasion, symptoms, duration, tendency to spread, in the plastic character of its effusions, and fatal issue. Indeed, so striking is this analogy, that excellent authorities have doubted the existence of any material difference in these two last forms of the disease; and this uncertainty may be greatly augmented when it has existed several days before medical aid is sought. It is when medication in all its forms has failed to arrest the disease, and human life is threatened, that surgery has been invoked to clear the avenues to the lungs: and then a correct appreciation of the condition, and parts involved, may be of immense moment to the victim. So that even in cases of doubt, the benefit of that doubt may not be withheld.

But here the operation of tracheotomy has now fallen into complete desuetude as a rule of practice, and this because as applied to the second variety, it too often presents few advantages, and least of all when undertaken in extremis. So unfavorably is this operation esteemed by the profession, that it is often difficult to obtain counsel to justify its performance, or the friends of patients to sanction this last chance for life. It is from these causes, together with the miscellaneous confounding of different phases of the disease, that we now rarely hear of the operation. Its success under such discouraging circumstances, becomes an important practical fact to the profession and the public: for after all the latter are alone called upon at the last terrible moment, to decide the case, and the prospect of success held out by the resources of our art may have great weight in that decision.

These observations are fully illustrated by a case which I saw in consultation at the request of Dr. Palmedo, a highly intelligent physician of this city, on the sixth day after the invasion of the disease. Dr. P., who had been associated in the case but the day previous, and watched it with intense and self-denying anxiety, has kindly furnished copious notes from which the following history is collated.

I. M. aged 4 years, of light complexion, rather delicate con-

stitution, but otherwise perfectly healthy, had suffered several attacks of croup since his second year. About the middle of March last he contracted a common catarrh, the result of undue exposure to wet and cold. On Friday March 19th, the cough which had been troublesome, began to assume a peculiar hoarse sound, and was soon followed by rapidly increasing dyspnœa. The real nature of the case was mistaken for a catarrhal affection of the tonsils, and afterwards for spasmodic cough, under which supposition pulv. mastic grs. viij. had been given in divided doses during Monday night. On Tuesday, March 23d, the symptoms becoming alarming, the parents of the child felt the necessity of calling additional medical aid, when the disease was recognized at the first sound, even before entering the sick room. The little patient being in imminent danger of suffocation, a sponge saturated in boiling water was instantly placed upon the region of the larynx, with a view to produce slight vesication. Subsequently six large leeches were applied to the neighborhood, and whilst still freely bleeding, a copious emesis was effected by the annexed powders.

℞. Sulphatis cupri, grs. xvij.
Sach. alba. ℥j. mix.

divided into six equal parts, one of which was administered every 10 or 15 minutes. To prolong this effect the following mixture was administered.

℞. Potass. tart. antimonii grs. iv.
Pulv. rad. ipecac . . . ℥j.
Oxymel, scilla . . . 3ij.
Aq. destil . . . 3.

and a dessert spoonful repeated every ten minutes for half an hour. Large quantities of thick viscid slime, and several masses coagulated in the form of membranes and strings, were thus ejected. In about an hour and a half from the commencement of this treatment all the urgent symptoms began to subside. The face became quite pale, respiration slow, perfectly easy, and scarcely audible. The cough less frequent and loose, was followed by copious expectoration. Pulse 80,

soft and small, with a cool and moist skin. Sleep soon succeeded, the first that had been experienced for two nights. He was, however, directed to be aroused every hour for the alternate administration of the following mixture and powders.

℞. Ammon. muriatis.	℞. Hydrarg. sub. mur.	grs. vj.
Pulv. glycyrr. aa. ʒi.	Antim. sulpt. aurar.	grs. iv.
Vini antimonii, ʒjss.	Pulv. g. acacia,	ʒss.
Oxymel. scillæ, ʒij.		Mix.
Syr. simp. ʒj.	Div. in chart. No. vj.	
Aq. anisi, ʒij.		
	Mix.	
Dose,	ʒij.	

In addition, an aperient enema was given, and emp. vesicat. 2 × 2 inches, applied to the throat. Thus the night was passed quite comfortably, and strong hopes entertained for the child's recovery.

March 24th.—Towards morning, however, the respirations became a little more hurried and wheezing. Pulse, 100; cough dry and more frequent. The above-mentioned powders having been exhausted were repeated, and given every alternate hour with ʒij. of the following mixture:

℞. Potass. tart. antim.		grs. ij.
Syr. senega.		
Syr. ipecac.	 āā	ʒss.
Oxym. scillæ,		ʒij.
Aq. anisi,		ʒij.
		Mix.

Towards noon, the respiration became more difficult and wheezing; a slight mucous râle discovered in the lungs, and a louder râle in the trachea; occasional harsh cough, and expectoration very scanty. Pulse, 110. Anticipating an extension of the disease to the lungs, three more leeches were applied over the sternum, and the following cathartic given:

℞. Sub. mur. hydrarg.
Pulv. jalap, aa. grs. x.
Mix.

About 1 P. M., a copious and fœtid discharge took place

from the bowels, after which the pulse and respiration were somewhat relieved. An unfavorable prognosis was however entertained, anticipating another relapse. This actually supervened about 6 P. M. Each inspiration became more wheezing or whistling, and laborious to the extreme, with extraordinary contractions of the diaphragm, aided by all the voluntary muscles. Cough dry, rough, and barking, but less frequent and strong than yesterday. Occasionally a loud ralê was detected in the trachea, but no expectoration, and there was now perfect aphonia.

At 9 P. M., he was rapidly exhausting with paroxysms of intense excitement and agony;—the whole body thrown into convulsive action whilst struggling for breath, under a sense of impending suffocation. Between these attacks he lies listless, half unconscious, with eyes closed, face and lips livid, countenance pinched and sunken. Pulse 120 and weak, but still sufficiently distinct to be counted. Cool perspiration over the forehead; extremities yet warm. Thorax resonant on percussion and respiration; when it could be heard, puerile. All hopes from emetics, and in fact from any medical treatment, was abandoned: and in answer to the urgent entreaties of distracted parents and friends still to do something for the relief of the sufferer, Dr. Palmedo proposed tracheotomy as offering a slight, but yet the only hope of salvation. In this condition, I was requested to see the child; and, anticipating operative proceedings, desired my friend Dr. John Cochran to join the consultation. Death seemed inevitable; and the child being now almost past consciousness (at least of pain), the operation was urged purely as a matter of duty, and finally assented to, but without an expectation of success.

At 10 P. M., the child being placed on a table, with the neck well raised, and made tense by depressing the head, I commenced a longitudinal incision just below the cricoid cartilage, one and a half inches long. Carefully dividing the fasciæ upon a director, and separating the muscles, several large veins were brought into view, and pressed out of the way by curved spatulas. The thyroid isthmus interfering, was divided and compressed with very little hemorrhage. A free opening was then made into the trachea, into which air rushed

with great force. A medium tracheal tube was now introduced and secured with tapes, compression above and below the wound being effected by adhesive straps. By means of a long feather, some tough shreds of membrane with viscid mucus were removed. In a few moments, the natural respiratory movements of the chest became slowly perceptible, and in an hour the calmest and most regular breathing was established, color and life returned to the face, and the child was asleep. When awakened, he was perfectly conscious and comfortable; drank two tumblers full of water during the night, coughed frequently, and ejected large quantities of viscid secretion, which continually accumulated in the tube, and required removal with a feather.

March 25th.—Towards 4 o'clock in the morning, the respiration became more frequent and laborious, and the cough dry. On introducing the feather through the canula, a solid substance could be felt blocking up the trachea, but nothing could be thus extracted. The symptoms again seemed threatening suffocation; however, by insinuating the feather about 4 inches into the trachea and beside the obstructing body, such a violent fit of coughing was produced that a hard fibrinous mass, $1\frac{1}{2}$ inches long, and of similar calibre to the tube, was thrown out and to a considerable distance, whereupon the child dropped away, quite exhausted, and fell asleep. Several smaller masses, with a vast quantity of thick, reddish and glutinous slime, were expectorated during the whole day: between the intervals of the cough, the child appeared quite easy, and took some beef-broth.

In the afternoon, between four and five o'clock, the symptoms again became aggravated; and suspecting obstruction of the canula, it was removed, cleansed, and replaced. But still the respiration continued frequent, difficult, and noisy, in consequence of accumulated exudation in the trachea which could not be dislodged. At length a piece of sponge secured to the end of a curved probe, and saturated with the following solution,

R. Argenti Nitratis, ℥ij. cum Aq. Destil. ℥j.,

was introduced through the canula into the trachea about four inches in all. The momentary effects of this operation were ter-

rific. The child twisted and writhed seemingly in the greatest agony; leaped up in his bed, and made every possible effort to blow through the tube. It was the last struggle for life: a few moments' delay, and suffocation seemed inevitable: but by a final and still more vehement paroxysm of coughing, another mass of concreted, fibrinous matter, two inches long, was blown up high in the air, when the same happy change took place as in the morning, followed by sleep, and a comparatively easy night. Of the following mixture he was directed to have a teaspoonful every two hours:

R. Liquor. potass. ℥ij.
Acet. scillæ.
Syr. ipecac. aa. ℥j.
Mucil. g. acacia, ℥ij. mix.

A free secretion of mucus took place after the introduction of the solution, and to obviate its desiccating in the tube, thereby preventing the free transit of air, the internal surface was lubricated with oil of sweet almonds, and every five or ten minutes a few drops of warm water were introduced by means of a feather. The expectoration was evidently much facilitated by this simple imitation of the natural condition of the air passages. The tube was daily removed without trouble—the symptoms of the child continued to improve—and the secretions of the chest gradually verging towards a healthy condition.

March 28th and 29th.—It was unnecessary to remove the tube, which was readily cleansed by the swabbing, and on the following day a new tube with a large oval opening in its posterior wall, was substituted for the old one, through which some air was found to pass by the larynx.

April 6th.—On removing the tube, the child for the first time cried and spoke, but seemed frightened at its own voice.

April 9th.—The air passages being now tolerably free, the tube was removed, and its place closed by adhesive straps. The voice is a few notes higher than before.

April 11th.—The wound in the trachea is quite closed by granulations, and the child constantly prattling in its natural tone of voice. The cough is scarcely troublesome, the secre-

tions healthy, and rest undisturbed. With a good appetite, it is rapidly gaining lost flesh, and now walks and plays about the room.

We have been thus particular in recording the minutiae of this case, to demonstrate, first, the urgent necessity for the operation; and second, the perplexities it may sometimes surmount. But to command for it confidence and popularity, requires the exercise of care in analyzing symptoms, comprehending the location of the obstruction, its true pathological cause, amount, extent, and the tendencies to death, before the operation is demanded. Neglect of these precautions by "wise ignorance," has often brought true conservative surgery into disrepute, and the proclaimed necessity of this operation in disorders simulating inflammatory obstruction in the puerperal and hysterical condition (cases by no means uncommon and apt to alarm the inexperienced), has still further brought disfavor upon it, and depressed the resources of science, in public estimation.

ART. V.—*Lemon Juice in Acute Rheumatism.* By T. D. LEE, M. D., of New-York.

CASE 1.—William Coleman, fifty-one years of age, has had frequent and severe attacks of acute rheumatism for the last fourteen years.

April 30th, 1852.—Patient has not been able to remove from his bed for the last four weeks; and he is unable to sleep by night on account of acute pain; his hands, knees, and feet are very much swollen; and he is constantly growing worse. Patient has heretofore had attacks which have lasted three or four months. At 8 o'clock, P. M., patient commenced taking lemon juice, fresh from lemons; a tablespoonful in twice the quantity of cold water with a little sugar, every hour.

May 1st, 9 o'clock, A. M.—Patient sitting up endeavoring to shave himself. Says he feels better in every respect, and has slept quietly for four hours, which he has not done before for four weeks. Has taken six ounces of the juice. Same regimen to be continued as before.

May 2d, 9 o'clock, A. M.—Patient has slept well during the night, and is sitting up eating his breakfast. Six ounces taken. Says “lemon juice goes right to the spot.”

May 3d, A. M.—Free from pain, and only complains of soreness in his feet. Same quantity as before.

May 4th.—Still improving, having taken six ounces regularly.

May 5th.—Comfortable, and taking the same quantity of lemon.

May 6th.—Doing well, still taking the same quantity of lemon, having no disposition to leave it off.

May 7th.—Patient is able to walk about his room, and does not speak of any pain. Lemon continued.

May 8th.—Patient complains only of weakness in walking. Lemon juice discontinued, not having disagreed with the stomach or bowels in the slightest degree.

May 9th.—Patient sleeps well by night; has a good appetite, and is fast gaining strength.

May 10th.—Patient is only waiting for fair weather to go out.

CASE 2.—Mrs. P., seventeen years of age, has had frequent attacks of acute rheumatism for the last seven years. She is affected with enlargement of the heart. Patient is confined to her bed, and is unable to move or sleep on account of the severe pain she suffers; and wishes to have something prescribed to make her sleep. Patient was advised to try lemon juice for 24 hours, before using any other remedy; to this she assented. Remedy commenced at 10 A. M., as in Case 1st.

May 2d.—Patient has slept well, and has much less pain and soreness.

May 3d, 4th and 5th.—Improving. Continue lemon as before.

May 6th.—Free from all appearance of the disease. Lemon discontinued.

May 7th.—Patient walked out. Continues free from the disease. In this case, as in Case 1st, there appears to be a flexibility of the joints, unusual in recoveries after other modes of treatment.

In a third case similar to Case 1st, the lemon appeared to be equally beneficial. In two other cases, one sub-acute, the other chronic in type, the lemon juice had an equally good effect.

ART. VI.—*Upon the Diseases of the Isthmus of Panama.* By
JOHN A. LIDELL, M. D., OF NEW-YORK.

[Continued from Vol. VIII. N. S., p. 381.]

V.—OF DYSENTERY.

DISORDERS of the bowels, both on account of their severity and the frequency of their occurrence, are the "scourges" of northern men on the Isthmus of Panama. Of them, dysentery is one of the worst forms. This disease became prevalent among the men under our charge, about the first of March, but previous to that time we had seen scattering cases. The dry season, which corresponds to our winter, was then well advanced, the soil was parched, and the streams of water were very low. The men had then been in the country for some time, a considerable number having arrived early in December, and the balance about the eighth of January. They had, also, with scarcely an exception, suffered more or less severely from the fevers of the country, and consequently were more or less enfeebled.

We have already had occasion to notice the deleterious influence of the climate of the isthmus upon the abdominal viscera. We have had occasion to mention the chronic congestion of the portal vascular system, the chronic enlargement of the spleen and liver, the increased quantity and morbid quality of the biliary secretion, the impaired tone of the digestive function, and the irritable state of the gastro-intestinal mucous membrane, produced by the combined action of malaria, high atmospheric temperature, and excessive atmospheric humidity. These morbid agents seemed to be powerful *predisposing causes* of inflammatory action in the mucous membrane of the large intestines, in the manner just pointed out.

Among the *exciting* causes of dysentery, we may mention first, errors in diet, of which the most common one was taking food in too large a quantity. Some northern people, chiefly laboring men, continued to fill their stomachs with food to repletion, partly from habit, and partly from the mistaken notion that it was necessary to eat much, in order to preserve their strength or to recover it when

diminished by fever or other sickness, forgetting that the new thermometric relations by which they were surrounded, did not require the quantity of food which they had been accustomed to use in a colder climate, and forgetting that their enfeebled digestive organs could not assimilate the quantity even if it were necessary to preserve their physical vigor. In many cases, the natural result of this was, that more or less of the food so taken, instead of being assimilated, underwent the putrefactive process, became a local irritant, and was passed downwards through the intestines, becoming constantly more acrid till its final expulsion from the body. Indigestible kinds of food were detrimental in an analogous manner. The fruits of the country seemed to be productive of dysentery, only when indigestible kinds or excessive quantities of them were taken.

Another exciting cause of dysentery was the use of water of a bad quality. When this disease became rife among our people, we immediately instituted inquiries for the purpose of determining what had produced such a result, and, among other things, found that the cooks were using, as a matter of convenience, for culinary purposes, water highly charged with decomposing vegetable matter, taken from a neighboring ravine whose stream was nearly dried up by the advancement of the dry season. This practice was immediately stopped, good water was furnished for all purposes, and a sensible improvement in our bill of health took place.

Another exciting cause of dysentery was drinking excessive quantities of water, the quality being apparently good. We observed that a party of blasters, who were working in a rock thorough cut, exposed to the sun's rays from morning till evening, sweating most profusely, being very thirsty, and drinking a great deal of water to slake their burning thirst, suffered more from dysentery than any other class of men on the station. Precisely the same thing happened to the fresh parties who succeeded each other in the same rock cut. In this connection, we can with propriety quote from Mr. Lloyd, who, although a layman, seems to have been a trustworthy observer. Speaking of Porto Bello, he says, "The waters which run from the different mountains are particularly clear, and delicious to drink; but woe to the person who is rash enough to make immoderate use of them, their very excellence being their misfortune, as they cause dysenteries from which few escape; and almost all the fevers of the country degenerate into this disease."* The modus

* Vide Rockwell's Report, p. 471.

operandi of the exciting cause of dysentery under consideration was probably as follows: the large quantity of liquids thus taken into the stomach could be only partially absorbed, on account of the enfeebled tone of the organ, and the pre-existing chronic distention of the gastric veins, and the balance remaining was poured into the intestines, giving rise to a flux of greater or less severity, according to the pre-existing pathological state of the intestinal mucous membrane.

Another common exciting cause of dysentery was cold. At first sight such a thing seems scarcely possible in a climate where the difference between the hottest and coolest part of the day is but 10° Fahr., and the change between the extremes always occurs gradually. But when we reflect upon the strong proclivity to diarrhoea and dysentery, which people exhibited on the Isthmus of Panama; when we consider the effect of excessive atmospheric humidity in rendering the body more sensible to slight changes in temperature, and above all, when we remember the sensations of chilliness always felt towards morning on the isthmus by persons sleeping without blankets, or whose covering had been accidentally removed, we cannot doubt the morbid influence we have ascribed to colds. By it the cutaneous perspiration was checked, and if there was not a corresponding increase in the urinary secretion, a catarrh of the abdominal or respiratory mucous membrane was frequently occasioned, or even a high grade of mucous inflammation was lighted up in the large intestines. A similar result was often produced by remaining in wet clothes, and in a similar manner. In these cases, the diminution of temperature was occasioned by the rapid evaporation consequent upon the heat of the climate.

The last exciting cause of dysentery which we shall mention, was a neglected or badly treated catarrh of the bowels. We not unfrequently saw patients, who, after having a catarrhal diarrhoea for three or four days, to which at first they paid no attention, finally become severely sick of the disease under consideration.

No facts came under our observation on the isthmus, which would warrant the opinion that dysentery was propagated by *contagion*.

The *symptoms* of a well-marked case were the following: a hot skin; increased frequency of the pulse, thirst, diminution of the urinary secretion in respect to quantity, and increase in respect to color; frequent small evacuations from the bowels containing mucus and blood, tormina, constant desire to go to stool, and ten-

derness under pressure at some part in the track of the large intestines. Generally there was more or less tenderness about the sigmoid flexure of the colon, in some cases the tenderness was confined to that locality, while in others it was diffused through a much larger portion of the colon, and in still others the small intestines were involved to a greater or less extent. Occasionally the stools presented a uniform color and consistence, closely resembling reddish jelly. In some cases the quantity of blood in the evacuations was small, appearing in the form of streaks, while in other cases the stools consisted of little else beside blood. Sometimes the symptomatic fever accompanied the early symptoms of the local disorder, at other times it made its appearance afterwards, but in mild cases it did not appear at any time. The attack rarely commenced with a rigor.

Treatment.—We endeavored first to surround the patient with the external conditions most conducive to recovery. He was directed to maintain the recumbent posture in bed, his room to be well ventilated and kept free from bad odors, to take no food except a little thin arrow-root carefully prepared, or a little rice water, and to take drinks of any kind but sparingly. We sometimes experienced considerable difficulty in enforcing the latter injunction, on account of the patient's intolerable thirst. But large quantities of liquids even of the blandest character, taken into the stomach of dysenteric patients, almost always did harm by exciting the peristaltic action of the intestines, a result we wished specially to avoid, except there was a manifest indication to pursue an opposite course. If there was considerable tenderness of any part of the belly, if the patient was tolerably robust, and especially if he had been in the country but a short time, we directed six or eight ounces of blood to be taken from the seat of such tenderness by cups, a warm poultice to be applied immediately afterwards, and kept on the belly till the inflammatory process was arrested, or till another procedure became necessary. We had no leeches. They could have been applied to the anus with benefit in many cases. We usually commenced the internal treatment by the administration of from four to eight drachms of castor-oil, containing from ten to twenty drops of laudanum to prevent griping, and a few grains of calcined magnesia if the discharges were acid. The laxative was administered for the purpose of unloading the intestines, thereby diminishing or even removing entirely a powerful source of local irritation. As soon as the laxative had operated satisfactorily, we commenced the internal use

of antiphlogistic remedies combined with a suitable quantity of opium, giving the narcotic for the purpose of quieting the peristaltic action, and relieving the patient from the tortures of the tormina and tenesmus. Our usual prescription was calomel and opium, of each one quarter or one half a grain, combined with a little powdered sugar, and taken every second or fourth hour according to the urgency of the symptoms. We administered the calomel for the purpose of arresting the inflammatory action, i. e. as a pure antiphlogistic. In administering opium we were careful to avoid the depressing effect of narcotism. If the latter remedy did not agree with the stomach, morphine in corresponding doses was substituted. In severe cases of gastric irritability, the calomel was plainly contraindicated, and then we relied principally upon the local treatment to effect a cure. The anodynes, in the small doses mentioned, were almost always sufficient to fulfil our purposes. If the gastric irritability prevented their administration by the mouth, or if in spite of their use the gripings and desire to go to stool continued greatly to annoy the patient, a circumstance we seldom saw, we directed a suppository containing from one to three grains of opium to be introduced into the rectum, or a small enema of starch containing from a half to a whole teaspoonful of laudanum. Sometimes we combined a half or even a whole grain of ipecac with each dose of calomel and opium, but generally did not see any benefit derived from this addition. As soon as the sympathetic fever abated we applied a large blister to the tender part of the belly, and did not hesitate to repeat the application if necessary. This remedial agent used at the time specified always did much good. Some patients were too weak to bear even the loss of blood by cups. The principal local measures prescribed for them, were warm poultices to the abdomen and blisters as soon as indicated.

Under the simple plan of treatment just detailed, commenced at the onset of the disease, the frequency of the stools was always much diminished, the quantity of blood and mucus was sensibly decreased, and in three or four days disappeared entirely, and the pain and tenderness subsided in a corresponding degree. We often noticed a marked change for the better in the dysenteric symptoms on the occurrence of ptyalism, which, for the most part, was speedily produced by the small doses of mercury that have been mentioned, and was always slight.

When the blood and mucus disappeared from the stools, or ptyalism occurred, the use of calomel was always suspended. Castor-oil

and laudanum, or other gentle laxatives, were administered as often as the fecal accumulations in the intestines indicated.

In many cases after the dysenteric symptoms had disappeared, a bilious diarrhœa remained for a longer or shorter space of time. To such cases we gave small doses of the bicarbonate of soda (two or three grains), combined with a little opium (one half a grain), directing a powder to be taken four or five times a day, or as often as the bowels moved. Keeping the patient at the same time on a light and unirritating diet, enjoining rest, and applying poultices or counter-irritants to the belly if there was persistent tenderness. The administration of an occasional laxative completed the treatment.

Sometimes, as already mentioned, the irritability of the stomach contraindicated the use of calomel, and then we relied principally upon external applications, to cure the disorder. We cupped, poulticed, and blistered after the manner already described. Internally we gave mucilage, alkalies in small doses, and opium. When the latter remedy disagreed with the stomach, it was administered per rectum. At the same time, laxatives were not overlooked.

Occasionally the discharges of blood from the bowels were so profuse as to threaten a serious impairment of the patient's strength. For the purpose of arresting this hemorrhage, we used acetate of lead, in doses of from one half to two grains, combined with a half a grain of opium, to be taken every two or four hours, and also directed external applications diligently to be made. In some cases of this sort, *warm poultices* seemed to be too relaxing. For them dry cupping, frictions of the abdomen with ol. terebinth, and the application of *dry heat*, seemed to be more serviceable.

We observed that the vegetable astringents, such as the extract of krameria, galls, etc., could be used with marked advantage soon after the subsidence of the acute symptoms. According to our experience this does not generally obtain in the treatment of dysentery at the North, and it seems to indicate that the abdominal mucous membrane is in a more relaxed condition among dysenteric patients on the isthmus, than here.

During convalescence much caution was necessary. We considered it advisable for the patient to keep his belly warm by the application of a flannel bandage, and above all to avoid errors in diet: for they might readily occasion a serious or even fatal relapse. The tonic bitter infusions, such as gentian, quassia and camomile, answered a useful purpose during the stage of recovery. It was also necessary to administer quinine in order to prevent the accession of

paroxysmal fever, on account of the strong proclivity to the fever which patients exhibited while enfeebled by a recent attack of dysentery.

In this connection it may be well to mention the treatment of the congestion and hypertrophy of the mucous membrane, remaining after a severe attack of acute dysentery, which succeeded best in our hands. We employed dry cups, and counter-irritation effected by occasional sinapisms, and by frictions of the belly with ol. terebinth, or a stimulating liniment two or three times a day, keeping the bowels warm at the same time. Internally we gave the nitrate of soda dissolved in mucilage, and combined with opium, in doses of five or ten grains of the former and a quarter or a half a grain of the latter, to be taken every four hours. When the irritability of the intestinal mucous membrane was not very great, we administered the muriate of ammonia in doses of from five to fifteen grains, combined with a little opium, with excellent results. Indeed we are not acquainted with any remedy which is a more reliable resolvent of chronic, congested states of the pulmonary and intestinal mucous membrane, unaccompanied by ulceration, than the muriate of ammonia. When the cure was further advanced the tonic bitters were administered, and the vegetable astringents if the bowels seemed to be relaxed. At the same time a light, nourishing, and bland diet was allowed.

Such is a brief outline of the treatment of acute dysentery which we followed on the Isthmus of Panama. Its results were very satisfactory, for, of forty-eight cases, treated anterior to the 1st of May, 1851, at which time our record ceases, but one patient died, and he expired in a paroxysm of congestive fever which occurred unexpectedly, while he was convalescent from a severe dysentery, being still very weak. The cures were generally speedy and complete. The disorder became chronic in scarcely a single case. The patient who died of chronic dysentery and splenitis, mentioned in our last paper, was admitted from another station, far gone in his mortal illness. We had a great dread of the chronic form of the disease under consideration, on account of the sad havoc we had seen it produce among the soldiers after their return from Mexico.

We must now proceed to notice a morbid state of the economy which was not unfrequently associated with dysentery. Its description is introduced in this place, because, when thus associated, it might be entirely overlooked by a careless observer, both on account of the obscurity of its symptoms and the prominence of the dysenteric symptoms. This morbid state was *malarious fever*, often accompanied with *excessive congestion* of the *portal vascular system*, and some-

times, perhaps, with *stagnation* of the blood in the same system. In most of these cases a *complete* diagnosis was a matter of the highest importance. If malarious fever were present, and the dysenteric lesion alone were detected, and the treatment appropriate for it only were applied, the fever would be likely to go on from day to day, gathering strength with each succeeding exacerbation, wearing out the patient's strength, producing more and more trouble in the liver and spleen, increasing constantly the sanguineous engorgement of the abdominal viscera, and thus would react unfavorably upon the dysenteric process, and perhaps would even increase its severity in spite of the most active antiphlogistic treatment.

Again, when we reflect upon the important office which the liver performs in the animal economy as a blood gland, when we consider that the portal vein empties its contents into this organ for the purpose of being filtered (if the expression may be allowed) previous to their passage into the pulmonic and general circulation, we cannot be surprised that excessive congestion and stagnation of the blood in the portal vascular system, particularly in the liver itself, are productive of untoward results. Dysentery, when engrafted upon this morbid state of the organs and vessels just mentioned, is, in itself, frequently a matter of secondary importance. The inflammatory lesion of the intestinal mucous membrane is then but one of the consequences of the morbid state under consideration, and if the cause be removed, the effect will either disappear spontaneously, or be susceptible of an easy cure. But the dysenteric process becomes a matter of importance, on account of the capacity it has, in some cases, of reacting upon the blood in the portal vein, and engrafting upon it an *inflammatory dyscrasia*, whereby its coagulability is increased, and its tendency to stagnation promoted.

We can thus see how important a matter a complete diagnosis of dysentery was on the Isthmus of Panama. The patient's welfare demanded that he should receive the treatment appropriate for the whole of his malady, not that for only a part of it. The diagnostician's duty did not end when he ascertained that the patient had dysentery; it was also incumbent upon him to ascertain *all* the *relations* of that disorder. By so doing, many symptoms developed in the progress of these cases, which otherwise were enigmatical, could be readily explained, and the treatment became more satisfactory to the practitioner and more beneficial to the patient. At the same time experience taught us not to under-estimate the difficulties which often lay in the way of a complete diagnosis, and stimulated us to use every means in our power for perfecting it.

If the pathognomonic symptoms of dysentery occurred subsequent to an attack of malarious fever, and before its paroxysms had been arrested, the diagnosis was not doubtful. Such cases might, with propriety, be called climate fever with the dysenteric complication. But the diagnosis was not always so easily made. It was generally established only by a rigid interpretation and careful analysis of all the symptoms. We recognized the presence of malarious fever in these cases by attention to the following points. The febrile excitement was often widely disproportionate to the extent and severity of the dysenteric lesion, as denoted by the character of the evacuations, the amount of tormina, tenesmus, and abdominal tenderness under pressure, and the previous duration of the lesion. Sometimes the accompanying fever was evidently paroxysmal in character, the exacerbation and remission being well marked, and occurring at corresponding hours on different days. Besides the high grade or paroxysmal character of the febrile movement, many patients complained of much more debility than the severity or the duration of the dysenteric process would satisfactorily account for. Again in most cases there was a peculiar appearance of the patient's countenance, said appearance being most marked during the exacerbation, which always led us strongly to suspect the presence of paludal fever. This facies cannot be adequately described by words, but the eye of the practised observer will scarcely fail to detect it. By attention to these points, the presence of malarious fever was generally detected. But cases not unfrequently occurred, which did not admit of a positive diagnosis: cases in which a careful examination of all the symptoms would only raise in our minds a strong suspicion of the presence of paludal fever.

It may be well to state in this place, that we not unfrequently saw dysentery supervene immediately upon the subsidence of the climate fever; and the fever in turn reappear on the departure of the dysenteric symptoms. We present a simple statement of the fact without offering any explanation of it.

The severity of the inflammatory lesion of the large intestines, thus complicated with paludal fever, and marked congestion of the liver, spleen and whole portal vascular system varied much in different cases. Sometimes it was so slight, that the latter were the principal disorders requiring treatment; while in other cases the dysentery was very severe.

In the treatment of these morbid states of the organism, co-existing in the same patient, we endeavored to arrest the dysenteric

process, principally by topical applications. If the patient was robust, a few ounces of blood were taken with cups; and in all cases the belly was thoroughly poulticed. But to arrest the febrile movement was a matter of the first importance, for its continuance produced increasing congestion of the abdominal viscera and abdominal veins in common with other internal organs, and seemed both to aggravate the dysentery and increase the difficulty of effecting a cure. The dysenteric symptoms were always much mitigated by the cure of the fever; and to produce this result we used the following means: The bowels were cleared out with a little castor-oil and laudanum, or, instead of this, a saline laxative (the salts of potassa were preferred) was administered, if the spleen was much enlarged, the skin jaundiced, the biliary secretion scanty, and the patient complained of sensations of weight and fulness in the belly. The saline laxative was repeated in a short time, if copious liquid bilious evacuations were not brought away from the bowels. By removing an engorged condition of the abdominal veins in this manner, both the febrile and the dysenteric symptoms were always considerably relieved. As soon as a remission occurred, we administered quinine in liberal doses combined with opium, for the purpose of arresting completely the paroxysms. Occasionally quinine was given during even the exacerbation. After the cure of the paludal fever had been effected, our attention reverted to the dysenteric lesion. If their use seemed advisable, blisters were applied to the belly. Calomel and opium or morphine were administered internally in the doses and manner already specified, and suppositories or enemata of starch and laudanum were employed. In cases where we could not positively diagnosticate the presence of paludal fever, but nevertheless had good reason to suspect it, we did not wait for time to render our opinion clearer, but proceeded in the treatment on the hypothesis that it was present. By so doing nothing was hazarded, and the patient was generally much benefited. Not unfrequently the accompanying malarious fever was bilious in character. In such cases early anti-febrile treatment was a matter of no mean importance. For many patients of this class calomel did not seem to be so well adapted either as a laxative or cathartic, as the neutral salts. It appeared to disturb the hepatic secretion, without unloading the turgid abdominal veins to the extent required. Sometimes we noticed at the commencement of an attack of the complicated form of dysentery, that the evacuations from the bowels were copious, and consisted principally of blood, as if nature had availed herself of the inflammatory lesion, to relieve the

distention of the portal vessels by pouring out their contents. In all such cases we were cautious how we interfered with the hemorrhage, and we never ventured to arrest it, except the patient's strength or life was jeopardized by its continuance.

It has been already intimated that the saline cathartics, and particularly the salts of potassa, succeeded best in our hands, for the removal of chronic congestive turgor of the liver, spleen, and portal veins. We most frequently used the cream of tartar, on account of not having at hand the other salts of potassa, but would prefer the soluble tartar. The bitartrate of potassa was given in doses varying from two to four drachms, and repeated every two or four hours till large, watery, bilious evacuations had been brought away, and a considerable increase of the urinary secretion had taken place. By free catharsis and diuresis produced in this way, patients complaining of great debility often said their strength was increased rather than diminished, and sometimes even the inflammatory lesion of the large intestine rapidly subsided. The rationale of this treatment is not difficult to be understood.

Dr. A. C. Baker, of Illinois, has informed us, that in his neighborhood (a malarious district) he had often met with cases of dysentery for which mercurials and opiates were worse than useless—cases which he cured by the administration of cream of tartar, in purging doses, while a large proportion of those treated by calomel and opium, with or without blood-letting, died.

VI.—OF DIARRHŒA.

This disease also was exceedingly common on the isthmus. Almost every body had at least occasional attacks of it, and some persons suffered severely.

Besides that depending upon intestinal ulceration we noticed three distinct forms: *first*, the *simple*, or *diarrhœa crapulosa* of some nosologists; *second*, the *bilious*; and *third*, the *catarrhal*.

The simple form of diarrhœa resulted principally from excesses in eating and drinking. When food was taken in so great a quantity that it could not be properly chymified in the stomach, and absorbed by the lacteals, it ran off by the bowels, occasioning, in this manner, more or less flux. On the days when rations of fresh beef were dealt out to the men, we always expected that the following morning would bring us a large increase in the number of diarrhœa patients, and we were never disappointed. The fault did not lie in the quality of the

meat, but in the quantity which the people consumed. Those who partook moderately of it did not suffer at all.

In most cases the only treatment required was the complete removal of the cause. This we generally effected by a dose of castor oil, containing ten or fifteen drops of laudanum. But in some persons the intestinal mucous membrane was strongly predisposed to take on morbid actions, and the diarrhœa, though simple in its origin, was accompanied by prostration of strength, much griping, and tenderness of the belly. To them it was necessary to administer, besides a laxative, mucilage, small doses of opium, sinapisms, or poultices to the abdomen, and a light unirritating diet.

Bilious diarrhœa seemed to be directly occasioned by the excessive quantity and acrid quality of the hepatic secretion, and was one of the most common forms that came under our observation. The flux in these cases was occasioned both by the abnormal amount of bile poured into the alimentary canal, and by the morbid action (irritation), which its abnormal quality produced in the intestinal mucous membrane.

The following plan of treatment was adopted. At the outset a laxative was administered for the purpose of clearing out the bowels. We used castor oil and laudanum, *infusum rhei cum sodâ pulvis rhei et magnesia* and *seidlitz* powders; but generally preferred castor oil and laudanum. To neutralize the acidity of the intestinal contents, and to allay intestinal irritation we gave powders containing two or three grains of the bicarbonate of soda, and one-quarter or one-half grain of opium every four hours, or as often as the bowels moved, commencing as soon as the laxative had operated well. Rest was also co-joined, and a light, bland diet, consisting of arrow-root, farina, or oatmeal gruel. The laxative was repeated every day or every second day if its use was indicated; but such repetition was seldom necessary. This form of diarrhœa was chiefly remarkable for the immense quantity of bile which patients sometimes discharged during the course of an attack. It will be seen that the object we had in view in treating this disease was not to arrest the hepatic secretion, but to improve the quality of that secretion and to shield the intestinal mucous membrane from injury. The excessive biliary secretion seemed in many cases to be a result of a salutary effort on the part of nature, and therefore not to be interfered with except for good cause. The arrest of the biliary secretion under such circumstances seemed always to threaten the patient with a very unpleasant consequence, viz., an attack of jaundice.

The remaining type of diarrhœa which came under our observation on the Isthmus was the catarrhal. The pathological lesion upon which it depended was catarrhal irritation of portions of the mucous membrane of the intestinal canal, of varying extent, accompanied by abundant secretion of mucus. Sometimes this morbid action was confined to the follicles and their immediate vicinity, while in other cases it was probably spread uniformly over a considerable portion of the intestinal mucous membrane. One of the most common causes of mucous diarrhœa was suppression of the cutaneous exhalation, effected either by exposure to the chilly air of the night, by remaining in wet clothes, especially when fatigued, and by standing or sitting in draughts of air to cool when over-heated. Associated with it we sometimes saw catarrh of the respiratory mucous membrane. The term catarrhal is applied to it, not so much on account of the relation last mentioned, as on account of the pathological lesion which produces it. The higher grades exhibited a strong tendency to run into dysentery. The most note-worthy symptom was the abundant quantity of mucus in the evacuations. It is scarcely necessary to mention that cold was not the only cause of catarrhal diarrhœa. Irritation effected by the acidity of the intestinal contents was also a potent cause.

Treatment.—Warmth to the belly and the internal use of some of the milder antiphlogistics, such as the nitrate of soda, and opium, with a suitable diet, was generally sufficient to effect a speedy cure. A favorite prescription was “nitrate of soda ʒij. ; bicarbonate of soda ʒss. ; tinct. opii ʒij. ; mucilag. gummi acaciæ. ʒij.” Mix. Dose: one tea-spoonful every two or four hours. Or again we commenced the treatment with five or ten grains of blue pill, followed in a few hours with a table-spoonful of castor oil. After this had operated, the action of the bowels was controlled by small doses of opium, with or without alkalis. If the bowels were loaded, we always administered a laxative. If there was abdominal tenderness and much griping, counter-irritation by sinapisms, or hot poultices, were very useful.

It is almost unnecessary to state that we did not always see these three types of diarrhœa separate and distinct from each other, but that in the course of examining patients with a view to determine the precise pathological lesions upon which the diarrhœa depended, and of which it was, strictly speaking, but a symptom, we generally found the bilious and catarrhal forms commingled, and sometimes all three of them were present.

We saw but a few cases of the chronic forms of diarrhœa result-

ing from ulceration of the intestinal mucous membrane, on the Isthmus. We observed that people afflicted with pulmonary tuberculosis were very liable to attacks of diarrhœa, seemingly uncontrollable by art, and hence such people were immediately sent out of the country to a healthier climate, on ascertaining their true condition. There seemed to be not only a strong tendency to softening of the tuberculous deposits in the lungs, but also to tuberculous ulcerations of the intestines.

VII.—OF NEURALGIA MIASMATICA.

Several patients came under our observation, who complained of intense pain coming on at a specified hour mostly in the after part of the day or evening, unaccompanied by febrile movements of any sort. These pains would disappear in the course of the night, leaving the patient comparatively well till the corresponding hour on the next day, when they would return with all their original intensity. In every case these periodical pains were located either in the head, the sacral or the sacro-sciatic regions. The headache, which sometimes, but not always, was a hemicrania, was easily cured by the administration of large doses of quinine. Small doses generally failed utterly to accomplish the object for which quinine was given, and were therefore only an unwarrantable waste of a valuable remedy. Two or three doses, of ten grains each, taken in the interval, the last one about an hour before the time for the recurrence of the pains, were both necessary and sufficient to effect a cure. The sacral and sacro-sciatic pains sometimes required, in addition to this treatment, the local use of solutio veratrinæ (grs. ii. 3i.)

VIII —OF COUP DE SOLEIL, OR SUN STROKE.

Although the Isthmus of Panama lies under a tropical sky, and the sun is there vertical twice in the year, although the men worked mostly in the open air, still cases of sun stroke were by no means frequent. Our hospital record makes mention of but two, and the history of but one of them is contained in our notes. The subject of this was a Jamaica negro, aged about 30 years. Accompanied by others who worked in the same gang, he was walking in usual health on a newly made embankment, freely exposed to the rays of the noonday sun, when he suddenly fell, as if a violent blow had been inflicted on his head. He was immediately taken to the "Jamaica tent," and in fifteen or twenty minutes after the occurrence, we saw him. He was then ly-

ing totally unconscious, the pupils of his eyes were contracted, the surface of his body cool, the frequency and force of his pulse considerably below the healthy standard, and his carotid arteries throbbed violently. We caused his head to be raised and cold water to be poured on it in a small stream from an elevation of four feet. This was continued about twenty minutes when he recovered consciousness, and the surface of his body became warm again. The administration of a purgative was the only additional treatment required, and in a few days he returned to his work.

IX.—OF PANARITIUM.

Suppurative inflammations, involving the cellular and the fibro-cellular tissues about the hand, were very common, much more so than among the same class of people at the north. These inflammations were also less rapid in their progress, and therefore of longer duration than similar cases in New-York, and serve well to illustrate how much the vital powers of all northern people were depressed by the climate of the Isthmus. Indeed, the analogy between these cases and local inflammations, wounds, and bruises, occurring in persons whose constitutions are enfeebled by dissipation, hardship, or want of proper rest, is very striking. Another relation of panaritium worthy of note was the following: persons affected with it were very liable to be seized with the climate fever. This relation was also recognized by the natives, for when suffering from it they were careful not to expose themselves to the sun, lest, as they said, they might get the "calentura." We treated panaritium with ungt. hydrargyri smeared over the inflamed part, poultices, and free incisions made as soon as any matter had been formed. We had no leeches. The results of treatment were satisfactory in every respect, save the length of time required to effect a cure.

X.—OF RHEUMATISM

We formed the opinion that general rheumatic disorders are by no means frequent on the Isthmus. Though our observations were made on large bodies of men, we did not meet with a single undoubted case of even sub-acute rheumatism. We saw but three cases of scleroto-conjunctivitis, and were by no means certain that their paternity was rheumatic. They were easily cured by free purgation, blisters behind the ears, and by abstaining from the local use of cold washes during the first or acute stage. We also treated

one case of severe non-traumatic inflammation of the fibro-cellular tissue of the ankle joint, and of the metacarpo-phalangeal articulation of the index finger of the right hand. The accompanying sympathetic fever ran high. But this case differed essentially from genuine rheumatism, for it did not exhibit the slightest tendency to metastasis.

XI.—OF LYMPHANGIORITIS.

Enlargements of the lymphatic glands occurring rapidly, and accompanied with pain, heat and tenderness, were not uncommon. We frequently saw slight ulcerations or injuries of the extremities, speedily followed by inflammation of the lymphatic glands of the groin or axilla. Recovery in these cases was always slow. We may also remark in this connection, that gonorrhoeal patients were very liable to get swelled testicles.

XII.—OF TUBERCULOSIS PULMONUM.

Some persons suffering from tuberculosis of the lungs came to the Isthmus with the hope that their pulmonary complaint would be benefited by the change of climate; but all of them who came under our observation learned, at a dear price, the falsity of this expectation. Such people were sure to take the climate fever, and to suffer very severely with it. We have seen them in the cold stage of a paroxysm breathing with extreme difficulty, their lips blue, their faces of a leaden tinge, their alae nasi in motion, their eyeballs starting from the sockets, in short, with symptoms threatening immediate suffocation. It sometimes appeared to require all the resources of art to carry them safely through the paroxysm. We have witnessed the terror they manifested lest another paroxysm should occur, and sometimes have turned it to practical account for hastening their departure from the country. If it is difficult for those whose constitutions are unimpaired to withstand the ravages of the climate, what prospect lies before the consumptive other than certain death? The atmosphere is loaded with moisture and saturated with malaria. If the vital forces of his economy are not overpowered and crushed by a single paroxysm of fever, they are rapidly undermined by the poisoned air he breathes; and by the recurrent febrile attacks, the work of the tuberculous softening is either started afresh or is accelerated with fearful rapidity when already established, and the tendency to fresh depositions of tuberculous matter is at the same time powerfully promoted. His

frame, already too much weakened by the climate and its diseases, is but poorly fitted to bear the exhaustion consequent upon pulmonary suppuration; and hectic with its profuse perspirations, diarrhœa sets in, his emaciation rapidly increases, his strength as rapidly declines; his feet become dropsical, and he sinks speedily into an untimely grave. Sometimes, this event is forestalled by a paroxysm of congestive fever, to which he becomes more prone with increasing debility, and he is thus suddenly cut off. Such is the history of most consumptive people who persist in the attempt to live on the Isthmus of Panama. We are not acquainted with a worse climate for northern people suffering from tuberculous consumption of the lungs than that afforded by this portion of New Grenada.

XII.—OF HYPERTROPHY OF THE SPLEEN.

In connection with this subject, we shall make but two or three remarks. Patients suffering from large ague cakes are apt to be tormented with palpitation of the heart. On this account it is sometimes distressing for them to lay upon the left side in bed while the splenic enlargement remains. At the same time a physical examination fails to reveal any structural lesion of the heart. Impoverishment of the blood is undoubtedly one cause of such palpitations. But it is not difficult for us to conceive that a morbid condition of the spleen may react through the ganglionic system upon the heart and seriously disturb its innervation. Again it is not difficult to comprehend, that a considerable increase in the size of the spleen (the enlarged organ being firmly pushed against the inferior surface of the diaphragm, thereby diminishing the freedom of its descent during inspiration, and sometimes perhaps causing it to become more arched,) may interfere with the action of the heart in a mechanical way. People having large spleens often complain of strong pulsations in the left side of their bellies. These pulsations we think are mainly produced in the manner above stated.

The treatment which in our hands was most efficacious for hypertrophy of the spleen was the following: if the organ was tender under pressure, and especially if the patient complained of pain located in it, blood was taken with cups and then a blister applied. In all cases where it was not contra-indicated, free purgation was employed with much benefit. We are not acquainted with any remedy which more rapidly diminishes the size of spleens affected with simple enlargement than the hydragogue cathartics. Muriate of ammonia given in full doses, and quinine also, are useful remedies. But

either of them when administered continuously for some time becomes comparatively inert. Much benefit was therefore derived from using them alternately. The iodide of potassium was also advantageously employed in treating this lesion. But the procedure which was far more beneficial than any other, was the removal of the patient to a non-malarious climate.

In order to complete this sketch of the disease of Europeans on the Isthmus of Panama, it is perhaps necessary to mention the catarrhal inflammations of the respiratory mucous membrane, pleuritis, and diseases of the skin. The first mentioned disorders were of frequent occurrence, and were readily amenable to treatment. We met with but two well marked cases of pleurisy. They were easily cured by local depletion with cups, by the administration of tartar emetic, and by the application of blisters as soon as the acute symptoms disappeared. Much care was necessary in using tartar emetic on the Isthmus, on account of the irritability of the gastro-intestinal mucous membrane. Concerning the diseases of the skin, peculiar to tropical climates and the parasitic animals which, it is well known, sometimes produce serious lesions of the human organism, our observations were neither sufficiently numerous, nor made with sufficient accuracy to warrant the description of them in this connection.

ART. VII.—*Cases in Surgery. Spontaneous Fractures; and Injuries of the Bladder.* By W. PARKER, M. D., Professor of Surgery in the College of Physicians and Surgeons, New-York. Reported by STEPHEN SMITH, M.D.

CASE 1.—*Fracture of the Os Brachii at the insertion of the Deltoid Muscle in a Colored Preacher while in the act of Gesticulating.*—I was called in consultation with Dr. Sargeant, in July, 1844, in the case of Mr. R. Jackson, a colored minister of the Methodist denomination, who was suffering from a fracture of his right arm. He was of a stout build, very muscular and well developed, thirty-eight years of age, having no hereditary predispositions, and had never previously suffered a fracture of any of his limbs. There was no circumstance connected with his history giving evidence of unnatural fragility of his bones. The accident occurred while warmly engaged in an exhortation in a religious meeting, and upon making a violent gesticulation. On examination, the right humerus was found broken at the attachment of the deltoid. Union took place in the usual time.

CASE 2.—*Fracture of the Clavicle of the right side upon striking a Dog a severe blow with a whip.*—This accident happened July 14th, 1845. The patient, Mr. George Potts, was a mulatto, aged 35, native of the West Indies, of a scrofulous habit; vivacious, active temperament, and very intelligent. He was fond of sports, and spent much of his time in hunting. In one of these excursions, in attempting to strike his dog with a heavy whip, the clavicle was fractured about its inner third. On examination, the bone was found enlarged at the point of fracture, and was evidently in a diseased condition. He had been under treatment previously for scrofulous affections. The bone united favorably, but he died three years after, of phthisis.

CASE 3.—*Fracture of the Os Brachii in attempting to throw a Peach.*—September 17th, 1849, I was called to see Mr. J. C. of Brooklyn, L. I., having a fracture of the right arm. Five years previously, this patient contracted syphilis, for which he was treated; he has since taken iodide of potassium pretty freely for the same disease. In other respects, he is of a healthy constitution, a fruit-dealer by occupation, and has no hereditary taint. This accident occurred upon flinging a peach, in the market, at one of his workmen. Union of the bone was prompt and satisfactory, and this arm is as useful as ever. His health is now robust.

CASE 4.—*Fracture of the Tibia, Femur and Clavicle.*—This patient, Miss K. P., of good constitution and healthy parentage, when between three and four years old, suffered a severe and protracted course of hooping cough. Before she had recovered from this affection, she was attacked with measles, about the middle of December, 1844, during which the lung became complicated, and her life despaired of. She, however, slowly convalesced, and during the spring following, 1845, took iodide of potassium and iron, for general treatment. Her health became in some degree established in the course of the following season. In February, 1846, upon stepping down a stair of six or eight inches, the right tibia suddenly fractured, the fibula remaining unbroken. The fracture was treated in the usual manner, and united favorably; her health still continued delicate, and her constitution feeble. In July following, while in the country for her health, she accidentally slipped upon a rind of pear, and the result of the sudden movement was a fracture of the thigh of the same side, about the junction of the middle with the lower third. This fracture also readily united, and the limb has now its usual

strength. Since this accident, she has had chronic synovitis of both knee joints. She had nearly recovered from this affection, when in November, 1851, she met with a slight fall upon her shoulder, and fractured the clavicle. This united, and now, at the age of eleven her health seems established.

CASE 5.—*Fracture of the Femur—Non-union—Death. Cancer of the Lungs, and Cancerous Degeneration of the Extremities of the Fragments.*—Miss E. S., fifteen years of age, with no hereditary predispositions to disease, apparently in the enjoyment of substantial health, highly educated, and of a nervous temperament, has had, for upwards of two years, a small tumor, of the size of a walnut, on the inner aspect of the thigh, directly over the femoral artery. It has never caused her any inconvenience; is painless, and the lymphatic glands of this region have no appearance of being diseased. In December, 1850, while descending a staircase, and in making the last step, the thigh bone of the right side gave way and she fell helpless to the floor. The fracture was at the junction of the middle and lower thirds. During the first eight days, she had an attack of measles, but nothing occurred worthy of note. The fracture was treated in the straight position, and at the end of the fifth week the bone seemed united. During this time, however, the tumor of the thigh increased in size and ulcerated; the nervous system became involved, and her extreme irritability had frequently to be controlled with chloroform; and finally, upon starting from her sleep, the thigh was refractured in the former situation. The general system now sympathized more acutely, emaciation followed; the pulse became rapid, severe neuralgia constantly harassed her, and at length, about five months after the first accident, death put an end to her sufferings.

Autopsy.—Great emaciation; tumor, a large encephaloid growth in the second stage. Lungs both filled with cancerous masses, varying from the size of a shot to that of a walnut. In the thigh the callus had been removed, and an irregular encephaloid mass occupied its place; cancerous matter was also found deposited in the lower part of the shaft of the femur, and about the knee joint; it was detected in no other organs of the body.

CASE 6.—*Fracture of the Os Brachii in attempting to extract a Tooth with the Key.*—Mr. C., aged 38 years, apothecary by occupation, fractured the right humerus in attempting to extract a tooth. Patient states that for more than a year he has suffered more or less pain at

the seat of fracture, that the bone has seemed to him weak at this point; and he has been in the habit of avoiding using it when any effort was required, for fear it might break. During this time, the bone has been much enlarged in this place, and he has taken pretty constantly iodide of potass. for the relief of nocturnal pains in his head and limbs. He has nodes on his head, and these, with the enlargement of the humerus at the point of fracture, and the peculiar pains, mark it as a genuine case of tertiary syphilis. The bone united readily, but still remains very weak and quite useless. Much less than the ordinary amount of force was used in extracting the tooth.

Remarks.—Spontaneous fractures are alluded to by but few authors. It must be seen from a perusal of the foregoing cases, their causes are the predisposing causes of fractures in general, which, as set down by authors, are old age, certain diseases of the bones, as fragillitas and mollities ossium, and rickets, and such constitutional vices as cancer, scrofula, syphilis, rheumatism, and scurvy. Examples of fractures occurring in the aged spontaneously, or from the slightest external causes, are frequent in the practice of every surgeon; old age is indeed presumptive evidence of fracture in injuries befalling the bones. Dr. Good (*Study of Medicine*, vol. v., p. 332, ed. 3) mentions the case of a lady nearly seventy years of age, who broke both the thigh bones in kneeling in church; and on being taken hold of to be carried away, the os humeri was also broken without any violence and with but little pain. But those diseases of the osseous system itself, known as fragillitas and mollities ossium, and rickets, are more productive of this accident than all others. Examples under this head have been mentioned by early authors, but as some of the most striking instances have been recorded by Dr. Gibson, we prefer to quote him. (*Institutes and Practice of Surgery*, vol. i., p. 234, 8th ed.). “A patient of mine, a Mr. Green, residing near Trenton, in Jersey, has a son, now nineteen years of age, who from infancy up to the present period, has been subject to fracture from the slightest causes, owing to an extraordinary brittleness of the bones. The bones of the arm, forearm, thigh, and leg, have all been broken repeatedly, even from so trivial an accident as catching the foot in a fold of carpet whilst walking across the room. The clavicles have suffered more than any other bone, having been fractured eight times. What is remarkable, the boy has always enjoyed excellent health, and the bones have united without much difficulty or much deformity. The above was published in 1824; since then this patient died, in the twenty-third

year of his age, from partial dislocation of the first and second vertebræ of the neck, after a painful illness of fourteen weeks. Altogether he had experienced *twenty-four* fractures." A second case was communicated to him by Dr. F. Mettauer of Virginia "Alexander Mc—, a native of Scotland, about seventy years of age, rather below the common stature, of ruddy complexion, neither lean nor corpulent, of a sprightly, though irritable and pugnacious disposition, had always enjoyed excellent health, an inhabitant of Petersburg, Virginia, for twenty-five years, was so remarkable for his great liability to fracture his bones, that if he was seen a quarter of a mile from his dwelling, it was very common to hear some one say, "There goes old Ellick; I'll engage he will break some of his bones before he returns." He assured me that it always appeared to him from early infancy, that his bones were more easily broken than any other person's, and that he believed he could break the bones of the forearm any time by pressing them between his thumb and forefinger—that he had several times fractured the ulna, radius, os humeri, clavicles, in giving blows. None of his bones seem exempt from this extraordinary brittleness, for since my residence in P., I know of ten or twelve fractures of different bones. I think it probable more may have occurred during the same period; for latterly, the accident having become very frequent, his domestics managed his case, having from their experience, become expert bonesetters. The tibia, fibula, os femoris, have been broken several times from a sudden twist of the body, and from efforts to save himself from falls. His thigh bones have been broken when attempting to get on horseback. His ribs have also been frequently fractured from slight causes. His speedy recovery astonished all who were acquainted with his case; for seldom, in any instance, has he been confined more than three weeks.

The third case occurred in the practice of Dr. Elkinton, at Hadonfield, New Jersey, and is as follows. "In Jan. 1827, I was called to see Mr. B., a respectable man about forty years of age, he was seized with a fit, but when I arrived, had become tranquil; some medicine was directed for him, and as he was subject to epilepsy, I left him in charge of careful attendants. On my third visit, three days subsequently to his first attack, being alarmed at the contracted state of the pupil and other indications of disordered brain, a blister was ordered to the back of his neck, and upon removing his clothing a fracture of *both* arms was discovered above the elbows. Notwithstanding my investigations were made with the strictest scru-

tiny, I could not ascertain that the patient had received any injury either by falling out of bed or in any other manner. The only explanation I was enabled to assign for this strange occurrence was obtained from the report of his friends. They stated that during the night of his attack, while struggling in a fit, a very distinct noise or crack was heard, which, to use their own expressions, seemed as if he were breaking his bones. I have not the least doubt but that both fractures occurred at the time the noise was heard, from the force of muscular contraction operating on a system possessing some peculiarity in the organization of the osseous structure. This opinion was strengthened on mentioning the case to my senior colleague, Dr. Hendry, who had frequently attended the patient, and remarked at the time, it was very common for Mr. Barrett to have his bones broken. In a short time the bones were carefully reunited."

The fourth case is given by Dr. Goddard, of Philadelphia, September 27, 1832. Martin Stevenson, between three and four years old, fell from a step six inches in height, and fractured his thigh. When called to him his mother informed me that he had twice before fractured this thigh from very trifling causes. She also stated, that she herself had suffered from fracture once in the right thigh, and five times in the left. She first broke her left thigh, and found, upon recovery, that the right, from sustaining the principal part of her weight, was very painful, that at last it gave way on making a slight exertion, and shortened as much as the other had, during the cure, but has not been broken since. She also informed me that her brother, at thirteen, had suffered *two* fractures of one thigh and *nine* of the other, as well as *two* of the arm; besides which, one of his hip joints had been *dislocated*; from all of which he was perfectly recovered, with the exception of the deformity. Martin's thigh was firmly united in five weeks, and he was running about as usual. These people are of very short stature, and have small bones. Jan. 15th, 1833, Martin, whilst eating his supper, fell from his chair, and fractured both bones of the forearm, for which he is at this moment under treatment. He is now four years and one month old, and has had four fractures. Eight years after this last date, the whole number of fractures which this patient had suffered was fourteen; no instance is related where muscular action alone caused the accident, though they were generally the result of the slightest external violence.

In regard to carcinoma as a predisposing cause of fracture, S. Cooper remarks (*Surg. Dict., Art. Cancer*), "One of the most deplorable effects occasionally resulting from cancer is so great a fra-

gility of the bones, that those of the limbs are broken by the most trifling causes, as merely turning in bed, &c." It is especially worthy of remark that this influence of cancer on the osseous system, has been principally noticed where this disease attacks the breast. Desault mentions the case of a nun of Salpêtrière, having a cancer in her right breast, whose arm was broken as a person was handing her out of a carriage; union did not readily take place, and afterwards, while changing her position in bed, the thigh bone was also broken. Sir A. Cooper relates similar examples in his lectures, and Mr. Salter of Poole, has reported two most interesting examples of this description (*Med. Chir. Trans.*, vol. xv., p. 136). The first case was that of a lady, æt. 80, whose right thigh suddenly broke while she was standing at her drawers. She had for several months suffered severe pain in the thigh, especially at the seat of the fracture, but it left her after the accident and never returned; she had long been afflicted with cancerous ulceration of the mamma. The bone was treated in the usual way, and at the end of three months had acquired some firmness, but as the ulceration of the breast increased after the fracture, she finally sunk and died. The second case was a female, aged 56 years, who, for five months preceding the accident, had labored under violent pain of the right thigh, and a thickening of the periosteum a little above the patella. Upon attempting to step into a cart the bone was broken three inches below the trochanter. For several years she had a scirrhus of the left breast, which had been removed, but broke out again in the form of cancerous ulceration. She survived the accident three months, no union taking place, nor did she suffer any more pain in the limbs. In Case 5 the cancerous deposit was in the lungs and affected bone, but its effect upon the constitution was seen in the fungous formation of the extremities of the fragments, as also in their non-union. Mr. S. Cooper has recorded a case (*Med. Chir. Trans.*, vol. 17, p. 51) of spontaneous fracture of the femur and a rib of a person who was found post-mortem to have suffered from cancerous disease of the bladder. The same appearances of the extremities of the fragments as were noticed in Case 5, was also observed in this case, viz.: "When the chest was examined, the fifth rib on the right side was found to have given way near its central part, the ends of the broken portion being at the same time involved in a scirrhus substance, which had quite as indurated a feel as the hardest kind of cartilage. The femur was surrounded at its broken part, and also for some extent above and below the fracture, with a mass of the same kind

of morbid tissue already specified, which here formed a thick protuberance, increasing very much the deformity noticed about the hip directly after the occurrence of the fracture. The consistence of this tumor was rather softer towards the bone, than more superficially, and from that part of it which lay near the fracture, a reddish brown thick fluid oozed out. The greater portion of it, however, was peculiarly firm, and thickly interspersed with innumerable fragments of osseous matter."

Cases 2, 3 and 6 are instances in which the morbid fragility of the skeleton was traceable to scrofula and syphilis. Mr. Stanley (*Dis. of the Bones*, p. 239) gives a case very similar to Case 6 above. A female, aged 30, broke the humerus in the middle while raising a little chair; she had been under treatment for syphilis, and had suffered severe pain at the seat of fracture.

The same author records a case of *Fractures of the Humerus and Femora, following Rheumatism*. "A female, aged 24, was admitted into the Manchester Infirmary, in the supposition that she was suffering from rheumatism. As she was being carried up the staircase, the shaft of her left femur broke, and it was ascertained that nine months previously she had suffered a fracture of the left arm, in catching hold of a balustrade; this fracture had united, and the union of the fracture of the femur was also in progress, when, as the patient was being raised in bed, she felt a severe pain in the opposite thigh, and exclaimed that the bone was broken, which was found to be true." In another case, a female, aged 26, who had suffered rheumatism, fractured the femur while crossing the street. Two months after while under treatment for this fracture, and lying quietly in bed, the other thigh suddenly broke. Subsequently, and while still confined to bed, she suffered a second fracture of the left thigh and fractures of both tibiæ. No union could be brought about in this case, of any of the fractures, although "her general health was unimpaired, the appetite good, bowels regular, and the urine perfectly natural."

The *prognosis* in spontaneous fractures depends upon the nature of the various causes which thus predispose bones to this accident. It is seen by the foregoing examples, that in fragillitas and mollities ossium union has generally taken place readily, and in some cases even more quickly than in healthy bone. Mr. Stanley remarks, "It is remarkable that the fractures which occur in these cases, are generally accompanied by very little pain, and are followed by scarcely any inflammation in the part; it is still more remarkable, that not-

withstanding the unsoundness of the bone preceding its fracture, the union of it should take place in the ordinary period, and occasionally within it." Mr. Tyrrell says, "In the man who had so many fractures, the accidents were repaired with greater rapidity than I have seen in other individuals, the union of the fracture of the femur being perfectly firm at the expiration of three or four weeks" But when the system has long been the subject of a wasting or malignant disease, the same cause which rendered the bone liable to a spontaneous fracture, will prevent its reparation. The *proximate change* which is effected in the bony tissue in cancer and other grave diseases, is not well understood, but it seems probable, that alike as "in protracted cases of this disease (cancer), the mass of the solids diminishes, independently of any direct influence exercised by the morbid formation, and simply as a consequence of prolonged, deficient nourishment, exercise, &c. (*Walshe Nat. Treat. of Cancer*, p. 114). If, indeed, we could adopt the theory of Dr. Stark (*Ed. Med. and Surg. Jour. April*, 1845), which seems both rational in itself, and is rendered probable by experiment, that bone is a definite chemical compound formed by the gelatine and earthy salts; that the proportions of these constituents never vary where true bone exists, as plainly they could not according to the simple rule "that the same chemical compounds invariably contain the same elements united in unvarying proportions" (Fownes); that hardness of bone does not depend upon the amount of earthy matter contained in it, nor increased flexibility upon a diminished proportion of earthy solids in its texture, but in both cases upon the molecular arrangement of the ultimate particles; it would not be difficult to understand how a poisonous principle in the system might, by its influence over the vital actions, so change the structural arrangement of its constituents as to give rise to the different morbid states of flexibility and fragility. The *treatment* of this species of fracture does not differ from that practised in fractures in general.

INJURIES OF THE BLADDER.

Abscess of the Testicle—Inflammation extending up the Spermatic Cord and involving the Pubes and Parts about the Bladder—Sudden and copious discharge of Pus in Urine, with gradual Convalescence.—Wm. Richards, aged 21, a native of England, single, shoemaker, was admitted to Bellevue Hospital, February 15th, 1851.

Patient is of a delicate constitution, fair complexion, no hereditary predisposition to disease, has been subject to a cough occasionally from childhood; has had inflammation and suppuration of the glands of the right axilla. About the middle of last August an abscess formed in the right groin; the cicatrix is distinct and occupies the site of specific inflammations of this region; no cicatrix on penis, and he denies exposure for several months previously to the occurrence of this abscess. About the middle of December, while working at his trade and enjoying good health, the left testicle began to be painful and increase in size; he was obliged to suspend his work, and finally, after trying various remedies, entered the hospital. Upon examination the epididymis was found greatly enlarged, indurated and painful, especially the globus major, tenderness extending up the cord to the external ring; testicle uninvolved. Poultices were applied several days when the abscess pointed and was opened; a large quantity of healthy pus discharged. This matter was subjected to microscopical examination for the purpose of detecting spermatozoæ, but none were found.

Feb. 20th.—Improving; continue poultice. *22d.*—Complains of pain along the course of the left spermatic cord, which is very tender on pressure up to external ring; discharge diminished; has headache; pulse full and hard; tongue heavily coated with a yellow fur. Ordered pil. mass. hydrarg. gr. x; pulv. Doveri, gr. vj. *23d.*—Pain, tenderness and swelling of cord increased; right spermatic cord slightly involved; considerable tumefaction and tenderness over pubes; pulse 120; skin moist, tongue furred as at last record; ordered leeches along the course of the cord, and a saline cathartic. *24th.*—Leeches bled freely with some relief to local symptoms; bowels have been freely moved; tongue still coated with a thick yellow fur. Ordered locally lotio. opii et plumbi; and the following pill to be taken every three hours: hydrarg. sub. mur. grs. ij., pulv. Ipecac, grs., ij., pulv. opii. gr. $\frac{1}{2}$. *25th.*—Better; continue treatment. *27th.*—Symptoms all improving; pain and tenderness nearly gone; fever has subsided; discharges more abundant. Ordered quinine. Patient remained in this state up to March 16th, continuing the use of tonics and good diet to support his failing strength; at this latter date he was seized again with an inflammation of the cord which extended to the pubes and the parts adjacent, and was followed by extensive suppuration. *26th.*—Abscess on left side of scrotum; another in left inguinal region over internal ring; discharge free from

first opening; patiente maciates; appetite variable; continue tonic treatment. *April 10th.*—Matter discharges from several openings about the pubes; right thigh involved in the suppuration, swollen, painful, constantly flexed; treatment continued. The case continued without much change, excepting the gradual emaciation of the patient, until the last of April, when there occurred a large discharge of pus with the urine. This was frequently repeated by day and night, sometimes amounting to a pint at one effort. The discharge from the old opening now began to diminish; his strength gradually increased with the return of his appetite, and to secure a regimen most favorable to recovery, he left the hospital for his own home, about the middle of May. He was heard from several months after he left the hospital, and had then so far recovered as to walk about, and the discharge of pus by the urethra had nearly ceased.

Rupture of the Bladder from the Introduction of a Foreign Body by the Urethra.—Successful Removal of this Substance by an operation.—Partial Recovery.—Imprudence of Patient.—Death.—This case was communicated to Professor Parker by Dr. D. Pond, formerly of Granville, Vermont, in whose practice it occurred in the year 1836. Peter Williams, fifty years of age, of a vigorous, healthy constitution, intemperate habits, by occupation a tanner and currier, has been in the habit for several years of practising masturbation. He has a wife and several children, but has had no intercourse with them for the last five years: he is very illiterate, half-civilized, and leads for the most part a solitary life. In the practice of his disgusting habit, he has been accustomed to amuse himself by distending the bladder with air blown through a tube, and then allowing it to escape, and irritating the genitals by various means: in this manner he has removed the hair from the pubes, and the adjacent parts have the appearance of unnatural treatment. Three years since, he obtained the penis of a bull: and after many painful attempts and with commendable perseverance, he succeeded in introducing a portion of it into the urethra; finding its removal rather difficult, he divided it at the meatus urinarius, and endeavored to force the portion introduced further forward. In this painful predicament he applied to Dr. Pond for advice, who removed the offending substance with a pair of long forceps. Some time after this adventure, he prepared for himself a bougie of lead, ten inches in length, three-fourths of an inch in diameter, and weighing seventeen ounces. While practising with this instrument, it slipped from his fingers and passed beyond his reach along the urethra. For several

days he went about in this condition, suffering from the irritation which this unaccommodating instrument produced, but unwilling to seek medical assistance. At length, however, he was compelled, by the severity of his sufferings, to yield, and he again applied to the doctor for relief, giving a simple explanation of his situation and the circumstances leading to it. Upon examination with the sound, the foreign body was easily detected, as also felt upon introducing the finger into the rectum. It was resolved to remove the lead on the following day, by an operation practised above the pubes. After consulting his physician, however, he went to the tavern, drank very freely, became quite humorsome, and then rode home in a lumber-wagon. His sufferings returned with the return of soberness, and early on the following day, in a paroxysm of dysuria, the bladder ruptured, and its contents, both urine and lead, passed into the cavity of the peritoneum. He satisfied himself of this fact by blowing through a tube introduced into the urethra, as formerly, when he could feel the air pass through the rent in the bladder into the abdomen. The proposed operation was performed, but for the purpose of removing the instrument from the cavity of the abdomen instead of the bladder. The piece of lead above described was found in the cavity of the peritoneum, entirely without the bladder, having escaped through a rent in the posterior part of that organ. The only further note of this case is, that for nine days he seemed in a fair way to recover; but at this time becoming unmanageable, the wound was broken open, and he died on the fifth day after, fourteen days from the occurrence of the accident. The most important practical points in the case are thus unnoticed: as to what was done with the fluid in the abdomen; how the rent in the bladder was managed; what course of after-treatment was pursued with so much success; the symptoms and their progress to the fatal termination; and, finally, the post-mortem appearances. As it stands, however, it is another novel instance of the singular instruments which inveterate onanists sometimes resort to, to accomplish titillation. The rupture was, probably, rather a puncture of the bladder, resulting from the constrained position of this metallic bougie.

Rupture of the Bladder, with Recovery.—Case 1st.—I was called on the morning of October 16th, 1838, to visit Mr. C., residing in the vicinity of Cincinnati, Ohio. Patient was about twenty-five years of age, an Irishman, laborer, of good constitution. Two weeks previously, while at work excavating a bank of earth, it fell upon him, injuring his left side and back, and severely contusing the left

hip. Following the accident, he was confined to his bed from inability to exertion, although he suffered no paralysis of the extremities; his bowels were readily moved by mild cathartics, and the bladder, which during the first week was relieved only by the catheter, for the last six days was able to expel its contents in obedience to the will. At the period of my visit, the urine contained pus, and the bladder seemed but partially emptied, even when a large catheter was employed. The perineum and the inside of the left thigh were largely swollen and of diminished sensibility; and a spot upon the latter of the size of a dollar, two and a half inches directly below the tuber ischii, was actually gangrenous, and beginning to separate. He had no appetite, but slight thirst, tongue thickly coated, skin cool, pulse 120, weak; bowels tumid, but easily acted upon by cathartics. Ordered, as general treatment, stimulants and anodynes, and locally stimulating fomentations.

October 22d, saw this patient again. His general system had improved, the slough upon the thigh had separated, and urine containing pus was discharging from the opening; nothing passed by the urethra. His appetite had returned, and the same treatment was advised to be continued. He remained under observation several months, during which the fistulous opening gradually contracted, and the urine began to flow by the urethra. At one time, two calculi of the triple phosphate were removed upon enlarging the fistula; they were of the size of a common bean. He passed from under notice before the cure was complete.

The two following cases are chiefly interesting as instances of recovery: the first, which we formerly made many unsuccessful efforts to obtain, is taken from *Rynd's Pract. Obs. on Strictures*, p. —; the second was communicated by Mr. Tompkins of Yeovil, to the *Provincial Medical and Surgical Jour.* for Oct. 20, 1851.

CASE 2d.—A boy about ten years of age, standing on a dray or float on which there was a cask of sugar very imperfectly secured, unfortunately occupied the space between the front of the cart and its lading, when the horse accidentally fell, and the cask rolling forward jammed him against the cart and crushed him frightfully. He was brought to the hospital with his pelvis extensively shattered, his left thigh broken just below the trochanter, and, as very shortly appeared, his bladder ruptured also. He suffered intense pain, especially in the abdomen, which he could scarcely allow to be touched, but as the obvious injuries were so extensive the pain was chiefly attributed to

them; and he was placed in bed, and had some warm drink and other restoratives administered previous to being dressed. He very soon expressed a desire to pass his urine, but could not void a drop, and a catheter was then introduced, which drew off a very small quantity, deeply tinged with blood, but afforded no relief. These symptoms continued with great severity for several hours, except that sometimes urine flowed through the catheter, as if on these occasions its beak had been pushed through the rent into the depôt beyond it; but generally it did not, and in either case there was little or no alleviation of the distress. After the first twelve hours, the instrument always came out stained and blackened by sulphuretted hydrogen, and my colleague Mr. Porter, under whose care he was, remarked this as being a fatal symptom, having never seen recovery after it, a prognostic in which he was most agreeably disappointed. At the end of about forty-eight hours, a small abscess pointed at the left side of the navel, which being opened gave exit to an immense quantity of fetid pus and urine. This aperture became fistulous afterwards, and discharged clear and healthy urine whilst he remained in the hospital, which was more than three months. This boy recovered, and was seen and examined by several surgeons more than a year afterwards: the wound in the abdomen healed, and the water passed by the natural canal; but of the pathological process by which so fortunate a termination was obtained no one could form a conclusive opinion. It may be surmised that the extravasated urine had been more or less circumscribed, that it had induced inflammation which poured out coagulated lymph, and thus formed a cyst within which the fluid was completely insulated: but how it came to be regularly expelled afterwards, or what contractile force was exerted on it—in a word, how this newly formed sac came to perform the functions of a bladder, as it seemed to do, is a problem the solution of which surpasses my ingenuity.

CASE 3d.—The subject of this case was a man who, whilst undermining some earth in a deep cutting for a railroad, was thrown from a height of more than twenty feet; the ladder on which he was standing was knocked from under him by the sudden fall of an almost solid portion of earth, weighing several tons. The man fell on his back, and the pick-axe with which he was working, together with the ladder, were thrown several feet behind him. The main bulk of earth descended on his abdomen, and it required the united efforts of nine or ten men to lift it from his body. The surgeon who first

saw him, found the abdominal integuments much contused, and an extensive lacerated wound in the perineum, through which three fingers could be passed with ease, and which enabled him at once to discover that the bladder was ruptured. When seen by Dr. Tompkins, the patient was pulseless. There was considerable hemorrhage from the wound, which was three or four inches in extent, laying open the posterior portion of the urethra. Dr. T. passed his fingers through the wound, and found the bladder extensively ruptured, and at the same time introduced a catheter by the urethra, and brought it readily through the rent in the perineum. When reaction took place, the patient suffered most intolerable pain, accompanied with sickness and vomiting, for which a grain of opium was given every hour or two with the best effect.

Considerable sloughing of the integument of the abdomen took place. Fomentations and poultices were applied; the bowels were kept open by the aid of injections of castor oil; his strength was kept up, and opium given freely to soothe his pain, to the extent of from sixteen to eighteen grains a day. The wound soon began to assume a healthy aspect. A catheter was passed from day to day, and occasionally kept in the bladder a few hours at a time. At the expiration of two months the wound had healed, leaving the course of the urethra rather tortuous: but at the end of another month, when the man left the town, the bladder was so far restored as to enable him to retain from eight to twelve ounces of urine. With regard to the question how this wound was produced, Dr. T. observes:—"It is certain it was not from the entrance of any extraneous substance from without, for the man had on a pair of new corduroy trousers, suspended by his braces, and there was not the slightest rent about them. It is, therefore, evident that the weight and pressure of the earth compressed the bladder so completely within the pelvis, that the urine was sent forward with such force as to tear the urethra and the perineum in the manner described: and this tends to point out to us the utter impossibility of deciding in many cases, the precise mode in which wounds are inflicted, or the weapons or missiles by which they have been caused."

Remarks. In NO. 3, VOL. VI. N. S. of this Journal, we published some statistics of rupture of the bladder; since that date several cases have come to our notice which we will here briefly refer to, as supplementary to those tables. They do not, however, in any essential particular, modify the conclusions deduced from the facts then under consideration.

In the *Phil. Medical Examiner*, for Sept. 1841, a case is found taken from the *London Lancet*; the patient, a man aged 70 years, suffered from stricture: when he entered the hospital he had not passed urine in three days; the bladder was not relieved, and he died on the fifth day after the occurrence of complete retention. This is the first case we have met with where the patient was upwards of sixty years of age. The stricture was occasioned by a "wartlike thickening of the mucous membrane about an inch in extent." In Morland's "Extracts from the Boston Soc. for Medical Improvement" (*Am. Jour. Med. Sci. July 1851*), a case of "Fracture of the Pelvis, with Rupture of the Bladder," is reported by Dr. J. M. Warren. This accident happened from the falling of a bank of earth: the patient, aged 30 years, lived but an hour; the lesion of the bladder was apparent upon passing a catheter, its point being distinguishable in the cavity of the peritoneum. A case of rupture of the bladder, with very extensive injuries of the spinal column, was reported in the August No. of the *Northern Lancet*, by the editor. Another case was reported by Mr. W. E. Hole in the *London Lancet*, for May 1851: patient survived fifty-four hours. Professor Wernher has recorded a case in *Oppenheim's Journal*, July 1849, which terminated fatally on the sixth day. In the last number of this Journal, a case is reported by Dr. Dalrymple of Bellevue Hospital, in which the patient, suffering from fracture of the pelvis, lived thirty-two days, with many symptoms referable to rupture of the bladder; a condition of that viscus, found upon making an autopsy. A case of recovery was recently reported to the *Med. and Surg. Soc.* of this city by Dr. J. R. Wood, in which the fistulous passage above the pubes was closed by an operation. *Med. Times, June 1852.*

The fatal results of rupture of the bladder are consequent upon the extravasation of urine, whether this take place into the cellular tissue or the cavity of the peritoneum. In the former case, the patient sinks exhausted from the irritation of sloughing, and in the latter from peritonitis. The plain indications of treatment are to arrest this extravasation and remove the ill effects of the injury already done. The three cases of recovery above recorded agree in this particular, that the lesion of the bladder had an external communication immediately or soon after the accident; and it is to this circumstance, chiefly, that we attribute their favorable termination. In these instances the urine found a ready outlet, and was thus prevented from forming collections which should give rise to local or general irritation. The accident, in this respect, like many diseases,

may be considered conservative ; and aside from other injuries which may complicate the case, it is reduced to a case of (traumatic) lithotomy. In three of the five cases of recovery recorded in the paper before referred to, the rupture occurred into the cellular tissue ; in two of these, fistulous passages soon formed ; while in the third, the lateral operation for stone was early resorted to, with the most decided relief. The results of these cases establish the importance of an immediate operation, which shall lay open a direct channel for the escape of the contents of the bladder, and prevent the further extravasation of urine. In these several cases convalescence dated from the occurrence of the fistulous passages ; and in the latter, improvement followed immediately upon the operation, and a rapid recovery, although there were severe injuries of the pelvis. In many other cases where the urine has infiltrated the cellular tissue, and made its exit by a circuitous route, and the tedious process of sloughing, the patients have at length succumbed to the long-continued irritation. The introduction and retention of the catheter in the bladder does not, in the great majority of cases, accomplish any thing in the way of relieving it of its contents ; for the first act which it performs subsequent to the accident, is to contract to its smallest capacity, and thus force the urine wholly into the abdomen ; in this condition it afterwards remains, unless the rent becomes sufficiently closed to prevent the escape of the fluid. In this contracted state, the rupture, wherever its original seat may have been, whether at the fundus or base of the organ, is brought into the most depending position, and readily admits of the escape of the fluid, whether the catheter is introduced or not. Still more important is this operation, when the rupture takes place in the posterior part through the peritoneum ; could further effusion be prevented, there would be left to the system to contend only with the peritoneal inflammation induced by the first extravasation. But the most conclusive argument that can be presented in favor of the immediate performance of the lateral operation on the bladder, as for stone, is the case of Dr. Walker, before adduced, in which it was performed with the greatest success, although under most unfavorable circumstances.

ART. VIII.—*Memoir on Nicotine*, by M. ORFILA. Translated by CHAS. A. LEE, M. D., with notes : Paris, 1851.

EVERY one has been made acquainted with the details of the horrible drama, which was recently unfolded before the Court of Assizes of Hainaut; how that Gustavus Fougnyes was poisoned by *nicotine* in the dining room of the Chateau of Bitremont, at Bury, shortly after dinner in the same room. Although we have no information regarding the symptoms which he experienced, and which should be analogous to those I am about to describe, in speaking of the poisoning of animals by nicotine, yet we are certain that he died within five minutes after taking this alkaloid. The experienced medical jurist who has prosecuted the inquiry, has furnished the proof of the existence of nicotine in the digestive canal, and in the different organs of the unfortunate Gustavus, and has estimated at $7 \frac{3}{10}$ qrs., the proportion of the alkaloid, which he found in the stomach. During several months after the apprehension of Mon. and Mad. Bocarme, I devoted myself to numerous experiments, in order to ascertain if it were possible to detect nicotine, whether it exist in the alimentary canal, or in the various organs after absorption; this problem appeared to me very important, inasmuch as this alkali kills, as it were, with the rapidity of lightning, and as it belongs to that class of alkaloids, against which it is believed toxicology is powerless. It will be seen on reading my memoir, that I have been able to surmount all difficulties, and that it is possible by very simple means, to detect traces of nicotine, in the liver, the kidneys, the lungs, &c.

On his side, M. Stas, the learned professor of Brussels, charged with the report, demonstrated, after a long, persevering and delicate investigation, that he had obtained nicotine from the body; and that Fougnyes had died from poisoning by this alkaloid. The agreement of our results proves very clearly their correctness; especially, since each of us conducted his experiments, entirely ignorant as to the process by which they might be obtained; in fine, on the 20th of last May, I deposited at the National Academy of Medicine, a sealed packet, containing my memoir on nicotine, which I read at the sitting of the 3d June, and M. Stas wrote me on the 18th May, two days before, a letter from Brussels, in which he says:

"This language may surprise you perhaps, but surely, the observations which were daily made amply justify me. Strange; when no one knows of my labors; yet every one presents his objections; every one criticised me. I understand that the cause of all this is an opinion favorable to the accused; a sentiment I cannot blame; nevertheless, it inspires me with sad reflections on the weakness of the human mind."

After I had read my memoir, and the able essay of M. Stas, it was seen that the last was, as it should have been, more complete; we were, in fact, placed in different circumstances. I had experi-

mented on animals, to which I had administered nicotine; I knew that their organs would contain it, and I wished to show that it could actually be detected, and there was no necessity for using those minute and wise precautions, which were observed by M. Stas, so as not to lose an atom of matter, in seeking for what was unknown. Thus, in his investigation, nearly all the evaporations were performed in an apparatus sufficiently complicated and subjected to a current of hydrogen gas. When we reflect upon the facility with which organic substances are altered by heat, by the atmosphere, &c., we cannot but praise the rigorous procedure followed by the professor of Brussels, and follow it as a model, in all researches relative to the vegetable poisons. The suspected fluids, as I have always recommended in my works, should, above all, be evaporated *in vacuo*.

The following is the arrangement which I shall adopt in the following essay:

First. I shall describe the physical and chemical properties of nicotine.

Second. I shall point out the effects of nicotine upon the animal economy.

Third. Under the title of *Medico-Legal Researches*, I shall indicate the proper means of detecting this alkali, in artificial alimentary compounds, in the digestive canal, in the liver, the spleen, the kidneys, the lungs, etc.

Fourth. I shall examine whether nicotine may be discovered in the stomach of individuals, after having been a long time buried.

Fifth. I shall take up the question regarding the poisoning of Gustavus Fougnyes.

I. *Of the Physical and Chemical properties of Nicotine.*

Nicotine had been first noticed by M. Vauquelin in 1809. Possett and Reiman obtained it in 1828 from different species of *nicotiana*, the *macrophylla*, *rustica* and *glutinosa*. MM. Boutron, Charlard and Henry made known some of its properties in 1836. (See *Jour. of Phar.*) Havana tobacco contains 2 per cent. of nicotine; Maryland 2.3, Virginia 6.9, Alsace 3.2, Pasde, Calais 4.9, Nord 6.6 Lot 8 per cent. It is included among the vegetable alkaloids, which are *naturally volatile*, and which do not exceed three in number, viz., *conicine*, *theobromine*, and it is composed entirely of hydrogen, carbon and nitrogen, it may be represented by one part of 1 equivalent of ammoniæ ($H^3 N$) and one of carburetted hydrogen, containing 4 equivalents of hydrogen and 10 of carbon— $H^4 C^{10}$.

At the present time it is obtained by a much more simple process than that formerly employed; this process is now in use at the tobacco manufactory of Paris. A watery extract of tobacco is made; this is agitated with caustic potash—the nicotine is thus separated. It is again agitated with ether, which dissolves the nicotine separated, by the potash; it is then decanted, and the ether containing the nicotine is distilled at a very moderate heat, gradually increased. In separating the products, all the ether is volatilized; the heat is then

increased, and the nicotine obtained in the recipient—(*Schloessing*, Director of the chemical processes of the manufacture.)

Characters of pure Nicotine.

Nicotine is an oleaginous liquid, transparent, colorless, anhydrous, of a specific gravity of 1.048; becoming slightly yellowish after a time, and tending to become brown and thick on exposure to the air, by which it absorbs oxygen, with the odor of tobacco and a very acrid taste. It volatilizes at 250 degrees* (centigrade) and leaves a carbonaceous residue. The vapors which it gives off have the odor of tobacco, and are so irritating that one respires with difficulty in a place where a drop of this alkali has been evaporated. When we apply a torch or lighted candle to this vapor, it burns with a white fuliginous flame, and leaves a carbonaceous residue, like an essential oil. It changes to a deep blue, paper colored with turnsal, and redened by acid. It is very soluble in water, in alcohol and the fixed oils, also in ether, which readily separates it from a watery solution. The great solubility of nicotine in water and in ether constitutes an important fact in its chemical history, since most of the other vegetable alkaloids, not to say all, if readily soluble in one of these liquids, are not easily soluble in the other.

Nicotine combines readily with acids while parting with its warmth. Concentrated *sulphuric acid* and free from color changes it to a wine red. On heating, it becomes thick and acquires the color of the lees of wine. On boiling, it becomes black, and separates from the sulphurous acid. With cold *hydro-chloric acid*, it gives off white vapors, like ammonia heated in the same way; if heated, the mixture becomes of a violet hue, the deeper in proportion as the ebullition is prolonged. *Nitric acid*, aided by gentle heat, gives to it a yellow orange color, and white vapors of nitric acid are disengaged, and then red vapors of hydro-nitric acid; if it is heated still more, the liquor becomes yellow, and by boiling acquires a red color, like that of chloride of platinum; and if we prolong the boiling we obtain a black mass only. Heated with *stearic acid*, it dissolves and forms a soap, which becomes solid on coating, and which is slightly soluble in water and very soluble in cold ether. As for the rest, the simple salts of nicotine are deliquescent, and crystallize with difficulty. The double salts which it forms with the different metallic oxides crystallize more readily.

The aqueous solution of nicotine is colorless, transparent, and strongly alkaline; it behaves with many of the reagents like ammonia, although it throws down a white precipitate, with the bichloride of mercury, the acetate of lead, the proto and bichloride of tin; a yellow with the chloride of platinum, and the precipitate is soluble in water; a white with the salts of zinc, and the precipitate is dissolved in an excess of nicotine; a blue, the acetate of the bin oxide of copper; the gelatinous precipitate is soluble in an excess of nicotine forming a blue colored acetate, like that which ammonia forms with

* Boils at 375° F.—TR.

the same salt. It precipitates of an ochre yellow the salts of the sesquioxide of iron, and an excess of nicotine does not dissolve the precipitate. With the sulphate of the protoxide of manganese, it gives a white precipitate of oxide, which soon becomes brown on contact with the oxygen of the air. It separates from the salts of the chrome, the green binocide. The red permanganate of potash is instantly decolorized by nicotine, as well as ammonia; nevertheless this last alkali acts more slowly, and should be employed in a much larger quantity.

The following reactions may serve to distinguish the watery solution of nicotine from that of ammonia. The chloride of gold produces a yellowish red precipitate, very soluble in an excess of nicotine. The chloride of cobalt is precipitated blue, which changes to green, and which does not readily dissolve in an excess of nicotine, whilst ammonia dissolves the green precipitate and tinges the liquid red. Iduretted water precipitates the solution of nicotine yellow, as it does also the chloride of platinum; with an excess of nicotine the color becomes of a pale yellow, and is decolorized by the action of heat; ammonia, on the other hand, immediately decolors the iduretted water, without rendering it turbid. Pure tannic acid gives, with nicotine, a very abundant white precipitate, whilst ammonia does not render this acid turbid, to which it communicates a red color.

Independent of these reactions, M. Stas has pointed out others, which I shall describe. Thus, he has found: 1st. That the chlorohydrate of nicotine, mixed with the chloride of platinum, furnishes, in the course of a few minutes, needle-shaped crystals of a beautiful yellow (quadrilateral, rhomboid), prisms soluble in water. 2d. That the protochloride of palladium causes, with nicotine, a chocolate-colored precipitate, soluble in an excess of nicotine; the liquid alkaline, and of a sharp, metallic taste, evaporates in a dry vacuum, leaves a colorless syrup, which gives off the odor of the alkaloid; this syrup, neutralized by a drop of hydrochloric acid, furnishes a liquid, red as blood, which, added to protochloride of palladium, in a quantity equal to that first employed, gives, in a day or two, flattened and very large crystals of a double chloride of palladium and nicotine.—(See, for some other properties, the medico-legal question, relative to the death of Fougnyes, art. *Examination of the Stomach*.) If, to these chemical characters, which enable us so readily to distinguish nicotine, we add those connected with its action upon the animal economy, it will never be possible to compound it with any other substance. Observe the results of trials which I made in 1842 regarding this alkaloid, and which I published in 1843. (See the 4th Ed. of my *Grand Toxicology*.)

II. Effects upon the Animal Economy.

Experiment 1st.—I applied three drops of nicotine to the tongue of a small, healthy dog. The animal immediately exhibited signs of vertigo, and passed urine; in one minute, the respiration was hurried

and panting; this state continued forty seconds, and then the animal fell on its right side and seemed intoxicated. Instead of exciting stiffness or convulsive movements, it was weak and relaxed; yet the fore legs slightly trembled; five minutes after taking the poison, it made plaintive cries, and the neck seemed slightly stiff, on carrying the head back; the pupils were excessively dilated, and the respiration calm, and not accelerated. This state continued ten minutes, during which the animal could not stand upon his legs. From this time, the symptoms diminished, until they gradually disappeared. The next day, the animal was well.

Experiment 2d.—I repeated the above experiment with five drops of nicotine on a similar dog. The animal exhibited the same symptoms, and died at the end of ten minutes; nevertheless, it offered slight convulsive movements.* On opening the body next day, the membranes of the brain were slightly injected, and the vessels which ramify on their surface were gorged with blood; this injection was strongly marked on the left side, and at the base of the brain, which was of ordinary consistence, and the two substances composing it, slightly spotted; the striated bodies were much injected, as well as the pons varolius. The membranes of the cerebellum were also much injected, as well as the other parts. There was considerable congestion of blood between the first and second cervical vertebræ on the right side, that is to say, on the side on which the animal fell. The lungs appeared normal. The heart, whose vessels were gorged with blood, was greatly distended, particularly on the right side, with coagula of blood. The left ventricle was empty. The superior and inferior *venæ cavæ* and the aorta were alike distended with clots of semi-fluid blood. The tongue was corroded on the median line, and towards its posterior third, where the epithelium was easily removed. The stomach contained a black, pitchy substance, and a bloody fluid, which seemed to be the result of sanguineous exudation. The duodenum was inflamed in patches; the rest of the intestinal canal was healthy.

Since that time, I have made the following experiments, which I have repeated with the same results; except that in certain cases I have found the blood contained in the cavities of the heart fluid, when autopsy was made immediately after death, although it speedily coagulated.

Experiment 4th.—I applied one drop of nicotine to the eye of a dog of moderate size, and at the same instant the animal exhibited vertigo, and feebleness of its limbs; one minute after, it lay down upon its *right side*, and had convulsive movements, which became stronger and stronger; its head was drawn back. At the end of two minutes the convulsions ceased, and there was extreme weakness. In five minutes after, the animal was able to stand, but could not walk. Ten minutes afterwards, it was in the same state, without

* This nicotine was evidently not anhydrous.

having vomited or passed urine. When urged to walk, it made some awkward steps, and vomited about four ounces of a grayish alimentary paste. At the end of half an hour, he was in the same state, and evidently on the recovery: the conjunctiva was evidently inflamed, and the cornea opaque over a greater portion of its surface.

Experiments 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th. These twelve experiments were made by M. Cl. Bernard; I shall omit them here, as they have been described in the *Annals of Hygiene*, vol. 34, p. 259.

The preceding facts show, first, that nicotine is one of the most active poisons, whether introduced into the digestive canal, into the veins, or applied to the subcutaneous cellular tissue, or the conjunctiva; second, that in very minute doses it causes, almost immediately, difficult respiration, and a violent and convulsive agitation of the diaphragm, which gives place to a peculiar puffing, various movements of the muscles, convulsive and tetanic, vomitings, alvine evacuations, &c.; third, that in a little larger doses, e. g., 8, or 10 drops, if introduced into the stomach, it occasions, at the end of a few seconds, vertigo, which causes the animal to fall, with frightful convulsive motions, with opisthotonos, followed in about one minute with entire relaxation; fourth, that, for the most part, in the last case, death takes place at the end of two minutes, unaccompanied by vomitings or stools; fifth, that it acts upon the nervous system.

III. *Medico-legal Researches.—Pure Nicotine.—Aqueous Solution of Nicotine.—Mixtures of Nicotine with wine, coffee, albumen; matters vomited, and those found in the digestive canal, etc.*

1. Anhydrous as well as hydrated nicotine, are distinguished by the methods already pointed out.

2. *Mixtures.*—I made a mixture of equal parts (16 grs. of each) of red wine, a decoction of coffee, and a watery solution of concentrated albumen; I added three drops of nicotine; the liquid was disturbed (clouded); I then evaporated it to dryness in a sand-bath. The product, when cold, was agitated for several minutes with sulphuric ether, the ethereal solution decanted, and evaporated when cold, left a very small quantity of yellowish nicotine; in short, the oily liquid closely resembled the nicotine which I had procured; it struck a deep blue with turnsal paper, reddened; it gave with chlorine of platinum a canary-yellow precipitate, soluble in water; when heated in a small capsule, it gave off white vapors, with a very penetrating odor of tobacco, and inflammable on the approach of a burning body.

Fearing lest the acids contained in the wine might have saturated one portion of the nicotine, in which case it would not have been taken up by the ether, I desired to know whether the matter, not dissolved by ether, contained nicotine. To satisfy myself on this point, I exhausted it by ether; and when it would take up no more of the nicotine, I added to the insoluble matter a drop of pure potash diluted with several drops of water, in order to decompose the salts of nicotine which might have been formed, and bring it to view;

I afterwards dried the matter on a sand-bath, and the product, when treated cold by ether, *furnished a new portion of nicotine*; suffice to say, that in all medico-legal researches respecting this alkali, if the matters in which we suspect its presence are acid, we should never omit employing the potash.

3. The same mixture was agitated, as soon as cold, in ether; it separated in a few minutes into three layers: the upper one, ethereal, *colorless*; the middle one, yellowish, opaque, efflorescent; the inferior, transparent, of a clear color, like coffee, infused in water. At the end of two days, when they continued in the same state, I separated the uppermost, ethereal layer, and by evaporation of the ether, obtained nicotine. The middle and inferior layers were then evaporated to dryness in a sand-bath; the residue, when cold, and treated with cold ether, yielded nicotine; in fine, on evaporating the ether, there remained an oily liquid, changing to a deep blue, reddened turnsal paper, throwing down a yellow precipitate pure chloride of platinum, and giving off, when heated, very copious and odorous vapors; nevertheless, the odor of tobacco was not so readily distinguished as in the preceding experiments; because it was, in a measure, charged with the strongly marked odor of red-herring. It seemed to me evident, after this procedure, that it is best, when we wish to separate nicotine from mixtures, similar to those of which I am speaking, to treat with ether the matters which have been evaporated to dryness on a sand-bath.

4. *Mixture of the same proportions of wine, coffee, and albumen, without nicotine.*

On drying this mixture on a sand-bath, and treating by ether, as in the first experiment, I obtained a small residue, which so far from being alkaline, reddened the blue paper of turnsal, but did not precipitate the chloride of platinum of a canary-yellow; and which, when heated, gave off fumes of a peculiar odor, *in no way resembling that of the vapor of nicotine.*

5. I reduced to a pulp in a marble mortar $2\frac{1}{3}$ of the liver of a dog, and added *two drops* of nicotine; after triturating five minutes, mixing as thoroughly as possible, I diluted it with $7\frac{1}{2}$ distilled water, acidulated with three drops of pure concentrated sulphuric acid, and filtered it: the filtrated liquor, transparent, and of a citron yellow, reddened the blue paper of turnsal. I then introduced it into a retort, to which a recipient was adapted, and distilled over a sand-bath, until it was reduced to 3 ij.: during this operation there was deposited on the sides of the retort, a small quantity of a yellowish organic matter. The liquid condensed in the receiver did not contain nicotine; the liquid which remained in the retort (3 ij.) slightly acid, was saturated so as to render it alkaline, by a few drops of a solution of caustic soda; then I introduced it into another retort, furnished with a receiver, and distilled it over a naked fire; *the condensed liquid contained nicotine.*—In fine, after concentrating it by evaporation on a sand-bath, in a small porcelain capsule, I tried it with the reddened turnsal paper, chloride of platinum, bichloride

of mercury, acetate of copper, and tannic acid, and obtained all the reactions of nicotine: moreover, in heating over a lamp one portion of this liquid, I readily obtained fumes which exhibited the characteristic odor of nicotine.

6. When we distil in a close vessel, or a sand-bath, an ethereal or watery solution of nicotine, whatever precaution we may take, there volatilizes with the ether or the water, but especially with the latter, a sensible quantity of nicotine.

7. I heated a quantity of stearic acid with three drops of nicotine, until the nicotine ceased to be dissolved in this acid; on cooling the mass took the form of a white soft soap, soluble in ether, slightly soluble in water; *it did not change to blue, turnsal paper reddened by acid*. On heating this soap with a sufficient quantity of powdered hydrate of lime, with potash or soda, it was decomposed, and when the mixture was heated over a naked fire, with an additional quantity of distilled water, the nicotine passed off into the receiver. The results of this experiment are important to know, when we seek to extract directly by ether, nicotine from the organs which contain it, since it produces with the fat of the organs a soap analogous to that which I have just described. *Experiments.*—I administered to several dogs, 15 to 20 drops of nicotine; the animals died in about two minutes, presenting the symptoms and lesions described under the 3d experiment: moreover, the blood contained in the cavities of the heart in most of the animals was fluid, where the body was opened a few minutes after death.

IV. The Liquid found in the Stomach.

The quantity of this liquid varied from two drachms and a half to three and a half, or four and a half drachms; it was yellowish, viscous, and somewhat thick. On washing the stomach and the inner surface of the esophagus, with a stream of distilled water, and uniting the water with the viscid mass, I obtained a solution strongly alkaline, and weighing from 15 to 24 drachms, which I divided into two equal parts, A & B.

A. The solution, saturated with a few drops of concentrated sulphuric acid, produced an *acid reaction*. I filtered and evaporated it on a sand-bath in a porcelain capsule to dryness; I again filtered it in order to separate the organic matters which had been deposited: the filtered liquor was acid. I then saturated it with pure caustic soda, and when it was rendered alkaline, I distilled it over a naked fire, in a retort; the liquid condensed in the receiver was transparent and strongly *alkaline*; I concentrated it on a sand-bath until I had reduced its volume to one-sixth, when it exhibited *all the reactions of nicotine*.

B. Macerated for several hours in sulphuric ether, and filtered; the solution afforded a liquid *not alkaline*, nor did it color blue, but slightly reddened turnsal paper; I evaporated it by a very gentle heat to dryness; the product was oily, saponaceous, and of a yellowish white. I made it alkaline by a little caustic soda. I then distilled

the whole over a naked fire in a retort; the liquid, condensed in a receiver, transparent and alkaline, was reduced to one-sixth of its volume by evaporation in a sand-bath, and then furnished all the reactions of nicotine.

The Stomach and Esophagus, thoroughly washed, and free from the preceding liquid.

On dividing these organs into two equal parts, and treating one part with cold water, sharpened with sulphuric acid, and the other with sulphuric ether, I obtained a sensible quantity of nicotine; whether I employed the same process, as I have just described with the liquors of the stomach (see A and B), or treated with ether, and subjected the ethereal solution, decanted, to spontaneous evaporation.

The Liver.—I crushed and reduced to a pulp in a marble mortar, the whole of the liver, cut into very small pieces. The pulp was divided into two equal parts, A and B. I left portion A for 18 hours in about $5\frac{2}{3}$ of water, acidulated with four drops of pure concentrated sulphuric acid, which was then filtered; the liquor was acid: I boiled it for two minutes in a porcelain capsule; it formed a very abundant, reddish gray *coagulum*. I filtered it again; the liquid, transparent, of a greenish yellow, and slightly acid, was reduced to one-fourth its volume, by subliming over a sand-bath; it deposited, during this operation, a considerable quantity of brownish flakes, which I separated on the filter. The liquor, slightly acid, was made alkaline, by adding pure soda. I then treated this liquor by ether, and decanted; the ether was then evaporated in the open air, so as to get the nicotine. I then introduced it into a large retort, to which a receiver, which was plunged in cold water, was attached, and heated over a naked fire, nearly to dryness. During the boiling the matter frothed so much, that I was obliged to withdraw, for a time, the mattress from the heat, and this is the reason why I had a very large one. The liquor which was condensed in the receiver, was limpid, colorless, slightly alkaline, and exhaled a strong odor of nicotine; on concentrating it in a porcelain capsule in a sand-bath, it became more and more alkaline; when it was reduced to one-sixth of its volume it offered all the reactions of nicotine.

B.—I macerated this portion of the liver, for 18 hours, in $3\frac{1}{2}\frac{2}{3}$ of sulph. ether, and filtered it. The limpid liquor, evaporated as before over a gentle heat, was then dried on a sand-bath. Gradually, and in proportion as it was evaporated, it deposited a considerable quantity of fatty matter, like soap; the product reduced to dryness, took, when cold, the consistence and aspect of soft soap; when cold, and agitated with pure soda till it became alkaline, it was dissolved. In this state, after being introduced into a large retort, furnished with a receiver, which was plunged in cold water, and heated over a naked fire, it distilled a colorless liquid, transparent, slightly alkaline, and offering a feeble odor of nicotine. After withdrawing the liquid from the receiver, and concentrating it in a sand-bath till it was reduced to one-sixth of its volume, it presented all the reactions of nicotine.

The Blood.—I experimented only on 9 drachms of blood, extracted from the cavities of the heart, which I treated with water, sharpened by sulphuric acid, as I had done with part A. of the liver. After having subjected the filtrated liquor to the operations described under A. it was impossible to characterize the nicotine sufficiently as to affirm that it existed in the blood; but some feeble yet uncertain reactions, caused me nevertheless to believe that it was present. Is this result, proving so little, owing to the fact, that the blood on which I operated contained so small a quantity? or, might it not be owing to the facility with which nicotine abandons this fluid, as happens with so many other poisons? Every thing tends to show, that we may more easily detect this alkali, in operating on the blood of animals poisoned, which have lived from 25 to 30 seconds.

Spleen.—I left the spleen perfectly broken down, to macerate in a very feeble solution of caustic soda. At the end of 20 hours, I filtered and evaporated the liquor. When it had been reduced to about 6 drachms, I introduced it into a retort, and distilled over a naked fire to dryness. The liquor, condensed in the receiver, was limpid, colorless, *alkaline*, and of the odor of nicotine. When evaporated in a sand-bath, so as to concentrate it still more, it exhibited all the reactions of nicotine.

Kidneys.—These organs, treated with much diluted sulphuric acid, as before in the case of the liver, scarcely furnished any traces of nicotine.

The Lungs.—I obtained sensible traces of nicotine in experimenting on these organs with about 5 ounces of water and 4 drops of sulphuric acid, and in submitting the liquor, made alkaline by soda, either to the action of ether, or distillation over flame. (See *Stomach* and *Esophagus*.)

M. Stas, in his trials, in nearly all cases, treated the suspected matters with oxalic instead of sulphuric acid; the oxalate obtained, having been rendered alkaline by pure potash, was placed in contact with ether, which dissolved the nicotine, without acting on the oxalate of potash. The ethereal liquor was evaporated *in vacuo*, and the narcotine left behind.

Process.—The preceding facts led me to advise the following analytic process, in attempts to detect traces of nicotine in the matters contained in the digestive canal, or in the organs which have received it by absorption. The matters extracted from the digestive canal, or the organs of which I have just been speaking, should be placed in contact with 5 or 6 ounces of cold distilled water, acidulated with from 3 to 6 drops of pure concentrated sulphuric acid. After 5 or 6 hours of contact, the liquid should be filtered and evaporated in a sand-bath, until it is reduced to about one-third its volume. It deposits a notable quantity of organic matter only when the sulphate of nicotine remains in solution. On adding anhydrous alcohol to the liquor, after it has been decanted, a new quantity of organic matter is deposited; this is filtered and evaporated by a gentle heat in order to volatilize the alcohol. When the liquid does

not contain more volume than previous to its treatment with alcohol, it is saturated with potash or caustic soda. It is necessary to use an excess of one or the other of these substances, in order to make it sensibly alkaline. By this means the nicotine is separated, and is found mixed with the sulphate of potash or soda which has been formed. On agitating the whole with cold ether, which dissolves the nicotine without affecting the sulphate, we decant the ether, and evaporate it *in vacuo*, by the side of a capsule, containing concentrated sulphuric acid. If the experimenter has not an air-pump at his disposal, he can allow the ether to evaporate spontaneously, exposed to the cool air; in either case, *he will obtain nicotine*. Instead of heating the *alkaline liquid*, of which I have just spoken, by ether, he may submit it to distillation in a retort, over a naked fire, and receive the nicotine into a cold receiver, as I have stated in my account of experimenting for nicotine in the stomach and esophagus.

M. Stas, fearing lest the sulphuric acid might change a portion of the nicotine, concluded, as I have already said, to substitute for it oxalic acid. I see no objection to adopting this modification, although I am convinced that sulphuric acid in the state of extreme dilution, in which I employ it, can exert no bad effect. In short, in the numerous experiments which I have performed, I have never perceived the slightest trace of reaction with the nicotine, even when during the evaporation of the liquid to the third part of its volume, the sulphuric acid, *remaining free*, was become less feeble than when first employed.

IV. *Researches regarding Nicotine, in a case of judicial Exhumation.*

Experiments.—I poisoned dogs by introducing twelve drops of nicotine into the stomach: after death, which took place in from one to two minutes, I separated the stomach, which I had tied above the cardiac and below the pyloric orifice. I left the organ in a situation exposed to the air for two months (from 22d March to 23d May), the surrounding temperature varying from twelve to twenty-five degrees, centigrade. By the twenty-fifth of May, the putrefaction was at its height. I opened the stomach, and withdrew the alimentary mass, which was oily, thick, and very fetid; in general, I did not find much fluid in the stomach. After removing with care the mass, *which was alkaline*, and after scraping with a scalpel the interior of the viscus, in order to obtain the remaining matters, I macerated it for twelve hours in seven and a quarter ounces of water, to which five drops of pure concentrated sulphuric acid had been added. I filtered the *acid liquor*, then evaporating on a sand-bath until it was reduced to a very small part of its volume; it was left to deposit a certain quantity of animal matter. I then *filtrated* it, and continued the evaporation on a sand-bath until the filtrated liquor was reduced to six or eight drachms; *it was not sensibly colored*. After cooling, I agitated it with nine drachms of absolute alcohol, which precipitated a new quantity of organic matter; I filtered it; the liquor, still acid, was saturated and made alkaline by a solution of pure caustic soda.

The mixture, agitated with sulphuric ether, presented two layers. the upper one ethereal and colorless, the other watery and of a reddish yellow. The first of these layers, separated by the aid of a funnel and the finger, was placed in a small capsule of porcelain, and left to itself; the ether rapidly volatilized, and *left the nicotine pure*. In fine, the liquor had an oily consistence; it was strongly alkaline, and of a horrible smell: the bichloride of mercury, the chloride of platinum, the salts of copper, tannic acid, the permanganate of potash, &c., were affected by it, as by nicotine. On heating it over a fire, it gave off copious white fumes, having the acrid, irritating odor of nicotine.

The stomach, from which I had extracted the alimentary mass, above described, was cut into small pieces and repeatedly washed with distilled water, until the waters were no longer alkaline. In this state, the stomach, perfectly free from the alimentary material, was left for twelve hours in seven ounces of distilled water, acidulated with five drops of pure concentrated sulphuric acid; the sulphuric liquor, filtrated, was acid: subjected to evaporation on a sand-bath, and to the action of absolute alcohol, of soda, and of ether, as I had done with the alimentary mass, *it furnished a certain quantity of nicotine*, easily recognizable by the characters already pointed out, in speaking of that obtained from the former. Under certain circumstances, I would heat the sulphuric liquor saturated with soda in a distilling apparatus over a naked fire, and obtain the nicotine in the recipient. If instead of experimenting upon the stomach of animals when much decomposed, we bury the dogs which have been poisoned with a few drops of nicotine, we shall find this alkali in the digestive canal of those animals which have been buried for two, three, or even a greater number of months.

There is no doubt but that, on analyzing the liver, the lungs, and the other organs of animals, we can discover a certain amount of nicotine after many months of inhumation.

Thus I communicated to the Academy the facts relative to the search for nicotine, in organs which had undergone putrefaction, at the sitting of the 24th June, and established the position that we may detect this alkali three months after death.

I shall conclude by one observation, which is not without importance. M. Leseur and myself (*see 4th ed. of my Legal Med., Art. Judicial Exhumations*) have proved that we may detect *morphine*, *strychnine*, and *brucine*, many months after the mixture of these alkalies with the organs which afterwards had undergone the putrefactive decomposition completely; we see that the same holds true with regard to *nicotine*, and probably *conacine* also. How can we avoid being struck with the resistance which these *azotized bodies* oppose to most destructive agents, if not all organic substances? And is there any necessity of pointing out the importance of these researches, as connected with the suppression of crimes?

Note A. [It has been proved by E. Davy that *nicotine* exists in the leaves, root, and seeds of tobacco, and may be obtained by heating them

with water acidulated with sulphuric acid, concentrating the solution, and distilling with lime or magnesia. The product of distillation is a solution of ammonia and nicotine, which is to be saturated with sulphuric acid and evaporated to dryness; the sulphate of nicotine is then dissolved by ether, and decomposed by hydrate of baryta, while the nicotine is obtained by spontaneous evaporation—Pereira states, that to obtain it pure it should be distilled by an oil bath at the temperature of 228 F. It is a colorless, liquid, volatile alkali, having an acid, burning taste, and the odor of tobacco; restoring the blue color of reddened litmus, and rendering turmeric brown. It boils at 375 F., and at the same time, according to Thomson, undergoes decomposition. It becomes brown and thick on exposure to the air, is combustible with the aid of a wick, soluble in alcohol, ether, water and the fixed and vol. oils, forms salts with acids, most of which are crystallizable; atomic weight 210. A white flocculent precipitate takes place, when the acetate of nicotine is heated with a solution of bichloride of mercury, and a yellow granular precipitate, with chloride of platinum. The precipitates, which are double salts, lead to a suspicion that ammonia was present in the nicotine salt. Heated with water, the yellow precipitate obtained by chloride of platinum is converted into the platinum bichloride of ammonium. According to Thomson (*Organ. Chem.* p. 286), the following are the quantities of nicotine yielded by 1000 parts of various kinds of tobacco—Cuba, 8.64, Maryland 5.28, Virginia 10, Ile de Bilain 11.20, Lot 6.48, North 11.28, Lot and Garonne 8.20; for smoking 3.86. Nicotine is doubtless one of the most violent poisons known.

Nicotianin of *Hermstadt*, or the *tobacco-camphor* of *Gmelin*, is the concrete vol. oil of tobacco, which is obtained by submitting tobacco leaves to distillation in water, 6 lbs. of the leaves yielding about 11 grs. of oil, which swims on the surface; is solid, bitter, and has the odor of tobacco; volatile, insol. in water and dilute acids, but soluble in ether and caustic potass, and exciting in the tongue and throat a sensation like that produced by tobacco smoke, producing giddiness, nausea and vomiting when swallowed, and sneezing applied to the nose.

The *empyreumatic oil* of tobacco seems to be produced by the decomposition of some of the constituents of tobacco; is very poisonous, and has been supposed to be "*the juice of cursed Hebenon*," alluded to by Shakspeare (*Hamlet*, Act 1, Sc. 5), who also calls it a "*distilment*."

The contents of tobacco-smoke are carb. ammonia, acet. ammonia, *nicotianin*, *empyreumatic oil*, carbonaceous matter, moisture, and several juices.]—TRANS.

PART SECOND.

CRITICAL ANALYSIS.

ART. VIII.—*A Treatise on the Diseases of the Chest; being a course of Lectures delivered at the New-York Hospital.* By JOHN A. SWETT, M. D., Physician to the New-York Hospital; Member of the New-York Pathological Society. New-York: Appleton & Co. 8vo., pp. 590.

It is not easy nowadays to write any thing new in regard to Diseases of the Chest. The subject has of late years received so much attention from such a number of able and careful observers, that it is almost as completely exhausted as the patients of a clinical professor after the visits of his class. The same is true in a less degree of other branches of medical science. When, therefore, we take up a new treatise upon almost any *class* of diseases, embracing a large field of inquiry, we are satisfied if we find occasionally a new theoretical suggestion or a new practical hint. We are prepared to find the bulk of the work consisting of old knowledge. There are certain subjects upon which we cannot reasonably expect ever to obtain much more light than we at present possess. Many of the physical signs, for example, will be known for ever not more certainly than they are now known. The dulness of pleuritic effusion, the crepitation of pneumonia, the metallic sounds of large cavities, remain the same to us as when they were first observed, and will doubtless for ever remain the same, having passed into the general stock of permanent and positive knowledge. The power to make use of this knowledge will of course depend upon the natural gifts and acquired tact of each individual observer, but the thing itself will remain fixed as a mathematical formula.

But although a large portion of almost every book treating of a subject which has long engaged the attention of men of science, must consist of a repetition of received truths, it by no means follows that all are equally useful to the reader. Knowledge must be communicated in an attractive form. Systematic arrangement, clearness of

expression, and the general graces of style must be made to observe the main object. The absence of these may indeed be tolerated in works which profess great originality of thought, but their presence is almost essential to secure, even to such works, a high place among what may be considered classical writings. Hence, when we take up a new work, as at present, to examine it critically, we do so scarcely so much to see what the author has said as how he has said it.

We have read the work before us with much care and interest. Occupying a position second to none in the city or state, in the judgment of the profession, so far as relates to the branches of which this volume treats, its author has been widely known as a pathologist and skilful diagnostician. We had a right, therefore, to expect, and did expect, something from his pen which should be creditable to our medical literature. Nor have we been disappointed. It must be apparent to any one who reads Dr. Swett's treatise, that he possesses in a high degree that first requisite of a scientific writer, a perfect familiarity with his subject. He handles each topic in its turn with the unhesitating facility of an expert seaman who knows all the ropes of the ship, while his calm manner indicates the philosophic seeker after truth. The preparation of this work has apparently cost him but little labor. But the years which fitted him for the task were doubtless years of assiduous and devoted toil. The tree was planted early in a good soil. The care of years has brought it to maturity, and now he has but to shake it and the ripe fruit falls. And yet we are not entirely satisfied with the result. Our dissatisfaction, however, proceeds from longing rather than loathing. There is scarcely a sentence in the volume that we would have omitted, but there are some additions that might usefully be made. The book can hardly claim to be a complete treatise upon diseases of the chest, yet it certainly presents most of the practically useful points, and presents them in an attractive form. It is something more than an elementary work. He who knows only what it contains will yet know a great deal, and there is nothing in it the knowledge of which can be dispensed with at the present day by any one who would keep pace with the improvements of modern science.

Dr. Swett's style is easy and graceful, at the same time that it is remarkably clear and condensed. He never says a word too much, and when he repeats it is always something worthy of repetition. His opinions are convictions; and this leads him occasionally to state them as if they were settled facts, when those of other observers of high repute are unsettled or adverse. His illustrations are almost always happy, and his cases admirably selected and appositely introduced. On the other hand, the arrangement of subjects, especially in the first part of the work, strikes us as faulty. The following is the order adopted: Bronchitis, Pneumonia, Pleurisy, Laryngitis, Emphysema, Tubercle, Cancer. We should have preferred to place Laryngitis and Emphysema within speaking distance of Bronchitis, but this is not a matter of very great moment.

Having thus alluded to the general characteristics of the work, let us now proceed to examine it in detail, following for the most part the lead of the author.

The first two lectures are occupied with an account of the physical, rational, and constitutional symptoms of diseases of the lungs, and contain as much information on these matters as we ever remember to have seen in the same space. The chapter on the physical signs is certainly, though not minute, a most interesting and comprehensive *resumé* of what is known in relation to them. We know of none which we should select in preference to it, to place in the hands of the student of auscultation at the commencement of his task. We perceive that the author adopts the commonly received explanation of the mechanism of crepitation, namely, the passage of air through the secreted fluid, and this might be taken as illustrating a remark made above in regard to his *ex-cathedra* manner of making statements. We confess we have never been entirely satisfied that this is the true explanation of the phenomenon, and should like to have seen it stated in a note that there is a difference of opinion on the matter. It is not our purpose to enter into a discussion of the point, and we will therefore simply refer the reader to the recent work of Dr. Walshe, who adopts a different view.

The disease first treated of by our author is Bronchitis, and the sketch he gives us is very good, including allusions to the various circumstances under which it occurs, and an account of whooping-cough. The statement that the expectoration of simple acute bronchitis is "frequently streaked with blood," seems to us rather too strongly put, and conflicting in some degree with the subsequent statements when treating of tubercle, in regard to the very general connection of the symptom with that disease. He adopts the opinion of Dr. Corrigan of Dublin, in regard to those cases of dilatation of the bronchi, attended by an atrophied condition of the surrounding lung, to which that author applied the name of "cirrhosis." This view regards the primary difficulty as an inflammation attended by deposits of fibrin in the intervesicular tissue, and differs from that of Rokitsanski, who believes that it always commences in the smaller bronchial tubes.

The fifth, sixth, seventh, and eighth lectures are occupied with pneumonia and its consequences. While speaking of the morbid changes occurring in this disease, the author alludes very briefly to the conditions known as splenization, carnification (not a result of pneumonia), and gangrene of the lung. We quote what he says concerning the latter condition.

"It is usual to class *gangrene of the lungs* among the consequences of inflammation. It is doubtful, however, whether this is correct, at least in a majority of cases. It seems to me that gangrene of the lung resembles very much the gangrene of the toes in old people, and I have long suspected that it originates in the same cause, viz., a loss of nutrition from obliteration of the arteries. The bronchial arteries which nourish the lung are remarkably small and

long vessels, and well suited to become the seat of obstruction from a variety of causes. Yet no one has yet established the fact whether they are obstructed or not in gangrene of the lung. The subject is worth a careful study."

It will be perceived that the author does not regard gangrene of the lung as generally a result of pneumonia. Observing this, an opinion in which we entirely agree, we naturally expected to find the subject treated of by itself in a subsequent portion of the book. But not so. The paragraph quoted above, together with about a page and a half descriptive of the appearances, are all that we find on this important subject. The view presented is well worthy of attention, and since the author has promulgated it, we trust he will devote himself (we had almost said sacrifice himself) to the work of ascertaining if it be correct, so that when his next edition appears we may have something certain to rest upon.

There is nothing in this part of the volume to detain us long. The treatment proposed for pneumonia is the usual one, depletion followed by antimony. He regards calomel also as a remedy of great power in this disease, though far inferior to the tartar-emetic, and complains that statistics are wanting to show their relative efficacy. If there is any fault to be found with the treatment advised, it is that it is rather too active. In the pneumonia of children especially, we should be indisposed to administer the antimony to the extent he recommends.

We pass next to the subject of pleurisy, under which head we find much that is very valuable. The remarks upon the subacute form of the disease, are well worthy of notice. Cases of this description commence with what appear to be rheumatic pains about the chest, unattended by the ordinary rational and constitutional symptoms. The prognosis is less favorable than in the acute form. The following case will serve to show the character of the affection, and will also illustrate the author's concise manner of narration.

"A gentleman, about thirty years of age, of a delicate constitution, but in the habitual enjoyment of good health, having lost near relatives by tuberculous disease, was first attacked with pain in the back, which was regarded by his physician as lumbago, especially as no pulmonary symptoms were present, and there was no febrile excitement. After a few days, the patient began to be affected by dyspnoea, especially in going up stairs. This led to an examination of the chest, and a copious effusion was found to exist in the left pleural cavity. The mode in which this case developed itself, as well as the constitution of the patient, led me when called in consultation, to form an unfavorable prognosis, although nothing but the evidences of pleurisy as yet existed; and this opinion was justified by the result. The case improved for a time; the dulness on percussion diminished, but finally remained stationary, with a feeble respiration and an occasional mucous rattle over the part affected. After an interval of a year, this case terminated fatally as tuberculous phthisis—a fact confirmed by post-mortem examination."

Dr. Swett does not believe in those cases of pleurisy with prevalent effusion, in which the matter is supposed to be evacuated by a species of metastasis, suddenly, through the kidneys or bronchial tubes, and seems to think that when a sudden discharge of pus occurs by the mouth, it is always consequent upon the communication of the abscess with a bronchial tube. He is in favor of the performance of paracentesis oftener and earlier than it has generally been adopted, and even in some tuberculous cases when hydro-pneumothorax exists, having seen two cases of this kind where so little disease appeared after death as to leave an impression on his mind that the operation, had it been performed, might have materially prolonged life. For performing the operation he recommends the use of a trocar in preference to any other mode, though he relates a case in which this instrument failed to penetrate the thick false membrane lining the pleural cavity. In this case pointing subsequently occurred and the patient died, when it appeared that the membrane had been pressed forward by the point of the trocar as well as by a probe which was "pushed forward its whole length and met with no obstruction." This could hardly have occurred had a lancet been employed, and is an argument in favor of a cutting instrument. The same thing appears to have happened more than once to Dr. Bowditch of Boston, while performing the operation as recommended by Dr. M. Wyman in the more acute cases. (See *Am. Jour. of Med. Sciences* for April, 1852.)

The author appears to have very little faith in diuretics in the treatment of this disease. Blisters also he seems to regard as of no great importance. It is curious to observe what different results follow the use of the same means in different hands.

Speaking of the bronchial respiration which is sometimes heard in pleuritic cases, he accounts for it by the supposition of miliary tubercles, pneumonia, or old and firm adhesions which by tying the lung to the ribs prevent its compression. He then proceeds to say that "this bronchial respiration is the rule and not the exception in the pleurisy of young children," and thinks that in these cases the same explanation will not answer, but that possibly it may be owing to the activity of the respiratory functions in children rendering the lung less compressible than in the adult.

We are constrained to take notice of what seems to us a very important omission in these chapters on pleurisy. It is the absence of any notice whatever of the phenomena of displacement. But for the faintest possible allusion to them on page 127, and one or two similar ones in the chapters on diseases of the heart, we might almost infer that he was ignorant of the whole matter. As this, however, is not a supposable case, we must attribute it to sheer carelessness. But whatever the cause, we regard the omission as highly censurable. As elements in diagnosis, these phenomena must always be regarded as exceedingly valuable. They are appreciable by many who are not adepts in physical exploration, and are important helps to all. A *very moderate* effusion into the left pleura will

serve to displace the heart to a considerable extent. More or less displacement occurs in almost every case. As dislocation of the heart is frequently one of the earliest effects of the disease, so its return towards the natural situation is one of the earliest signs of recovery. The heart will sometimes traverse the whole anterior part of the chest, when the fluid is undergoing rapid absorption, in the space of three days. The liver and spleen, too, are occasionally dislocated to a very considerable extent, and this of course involves a change of form in the diaphragm. Are these things of so little consequence that they require no special notice in a treatise like the one before us? We could pardon the slight put upon gangrene, and not wonder at the author's declining a very close acquaintance with that subject; but *this* is an affair of the heart, and neglect in such cases is inexcusable.

We must pass hastily over the chapters on Laryngitis and Emphysema. Into the first has crept, by a sort of *error loci*, a very interesting case of aneurism of the aorta causing death by pressure upon the trachea near its bifurcation (and perhaps, also, upon the pneumogastric nerve), and another of "thymic asthma," as it has been called. We shall make room for a part of the author's remarks upon the treatment of croup.

"In membranous laryngitis, or croup, the antiphlogistic treatment—venesection, leeching, antimonials, and especially mercury, is that usually resorted to. But it may be well questioned whether this mode of practice is really attended with much benefit. Certainly, most cases go on, without even a temporary improvement, to a fatal termination; and in the few cases that recover, it is doubtful whether the treatment has contributed much to the favorable result. It has been thought that the free exhibition of mercurials is beneficial, by favoring a change in the character of the inflammation, by promoting a secretion of muco-pus. In this way it is thought that the effusion of lymph may not only be controlled, but that the secretion of muco-pus favors the separation and expulsion of the membranes already formed. It is far from being true that the disposition to form false membranes is dependent upon the violence of the inflammation. Many cases of croup occur in feeble subjects in whom there is but little constitutional reaction, and post-mortem examination confirms the opinion that the local inflammation has been very moderate in degree. There can be no doubt, also, that many cases, which have yielded to the prompt and judicious use of antiphlogistic remedies, were cases of simple acute laryngitis without the formation of membrane, a form of disease attended by symptoms quite similar, in most respects, to those of croup; and in children, not apt to be attended by submucous infiltration, and quite curable in its nature. But when false membranes exist in the throat, and you have therefore reason to believe that they have extended to the larynx, the influence of curative means is far less decided. For myself, when I look into the throat, and find nothing there except, perhaps, the traces of simple inflammation—in children, certainly—I am inclined

to hope for a favorable issue; but if, on the contrary, false membrane is noticed, the prognosis at once becomes very unfavorable, and antiphlogistic remedies will avail but little. So unavailing have been the efforts of some of our best practitioners to cure genuine croup by antiphlogistic remedies—or by a perturbing treatment, consisting in the frequent administration of emetics in conjunction with antiphlogistic remedies, that some have thought best to abandon this mode of treatment, and to leave the case pretty much to the efforts of nature, administering anodynes, especially small and repeated doses of Dover's powder, and permitting the inhalation of the vapor of warm water, rendered emollient by medication. This mode of treatment, while it has not, thus far, diminished materially the mortality of the disease, is said to have been favorable to the prolongation of life, and to have been especially conducive to the comfort of patients, by diminishing the frequency and violence of the paroxysms of strangulation, which are so formidable and distressing.

"But are there no mechanical means to relieve the obstruction, analogous to the scarificator in cases of membranous effusion? There is reason to hope, and some reason to believe, that the application of the nitrate of silver to the larynx, 40 to 60 grs. to an ounce of water, by means of the whalebone and sponge, may be attended with benefit, especially in cases in which the inflammatory action has originally been inconsiderable, or has been subdued by other means. There is reason to think, that this remedy not only acts favorably upon the mucous membrane, but that this mode of application may be made useful by aiding mechanically, in the removal of loose or of partially detached membranes in the larynx. It is a mode of treatment fairly entitled to a trial before resorting to tracheotomy."

The remark which follows in regard to the "difficulty of applying mechanical agents to the larynx in croup" on account of the age of the patients, need not deter any one from attempting the operation, which we believe is now beginning to be recognized as a very important addition to our means of arresting this formidable disease. Most of those who have tried it regard it as of easy performance. It is but justice to say, that for this valuable improvement the profession is indebted to Dr. Horace Green of this city, whose name is not mentioned by our author. *Suum cuique.*

Pulmonary congestion, its causes and consequences, occupy some half dozen pages. Pulmonary apoplexy is, in the author's experience, a very rare disease. "During a residence of a year and a half in Paris," he observes, "where I was constantly in attendance upon the hospitals, especially those in which chest diseases were most frequently to be found, I did not meet with a single case of the disease. Since that time I have met with a few cases, and, I believe always in connection with one uniform condition of the heart, viz., disease of the mitral valve with hypertrophy of the right ventricle. These cases have always been attended with hæmoptysis, usually abundant, and followed by speedy death." This accords with the experience

of Walshe and other observers, except as to the amount of the hæmoptysis. Walshe remarks on this point, that "profuse hæmoptysis is singularly rare." He agrees with Dr. Swett as to the obscurity of the physical signs, and points to the condition of the heart, and the "darkish, dirty-looking" character of the blood expectorated, as the chief means of diagnosis.

We pass on now to the subject of tubercles in the lungs, which occupies nearly one hundred pages, and is one of the most interesting portions of the work. We commend the lecture on the Pathological Anatomy of Phthisis to attentive perusal. It affords one of the best views of the subject we have ever read, being perfectly clear to the young student, and sufficiently minute to satisfy the wishes of those more advanced in science. We might select any portion of it at random to illustrate what we have said of our author's happy manner of conveying instruction. But this is unnecessary, as in the quotations we have already made and have yet to make, ample evidence will be found of the truth of the remark. As the question of the vitality of the tuberculous product is of considerable interest, we give his opinions respecting it. He is disposed to regard the tubercle cell as a distinct form of elementary cell, and tubercle, consequently, as a heterologous formation. So far as cell-development goes, this is evidence of an imperfect vitality. The changes which tubercle undergoes from the semi-transparent to the opaque, now explained by the microscope as consisting chiefly in an accumulation and increase of the tubercle cells, as well as the process of softening, like it commencing in the centre, and due to the liquefaction of the "interglobular hyaline substance," are both connected with cell-life. But Dr. Swett thinks the cases which have been recorded where capillary vessels have appeared to enter the substance of a tubercle, one specimen of which has come under his notice, are rather instances of deposit of the tuberculous matter around the vessel, without obliterating it, and do not warrant the conclusion that the product is ever organizable.

In regard to the causes of Phthisis, we are told :

"That the disease is most frequent at a certain period of life ; that it attacks the two sexes in about equal proportions, males perhaps rather more frequently than females ; that it is often hereditary ; that no peculiar constitution of body or temperament is more liable to an attack ; that certain professions or occupations are more liable to induce it than other occupations ; that a continued residence in tropical climates does not exert a favorable influence on the disease, as it exists in the natives of temperate regions ; that a sea life seems to exert a beneficial influence, especially in warm latitudes ; and, finally, that neither the exercise of the vocal powers, nor the existence of acute inflammations of the chest, nor habits of gross intemperance, seem to exert an influence favorable to the development of tuberculous phthisis."

To establish these points, the author relies chiefly upon the statistics furnished by others. Among the authorities quoted are

Walshe, Louis, Lombard, Benoiston de Châteauneuf, the British Army Reports, and those of the former editor of this Journal, the late Dr Forry. A paragraph bearing upon the influence of intemperate habits deserves to be extracted :

“It is an important question to answer, How does the intemperate use of ardent spirits influence the production of phthisis? This is a delicate question; but I must state what I know about it. Two medical gentlemen attached to the public Dead-house in this city, in which bodies are deposited which are found in the streets, or without friends—discovered in about seventy post-mortem examinations of those who had died of the most confirmed and aggravated intemperance, not a single case of tuberculous lungs. A most surprising result, when you remember that this unfortunate class have, probably, long suffered from poverty, bad nourishment, and exposure to the weather; influences which are regarded as predisposing to the tuberculous deposit. It is a singular fact, also, that while phthisis is much more common in the West than in the East Indies, hepatic affections are comparatively rare. A large proportion of confirmed drunkards suffer also from hepatic disease. Is a tendency to hepatic disease antagonistic to the development of tubercles?”

A critical examination of the principal symptoms of Phthisis follows the lecture on the Causes. The cough, expectoration, dyspnea, pain, as well as the emaciation, rapid pulse, hectic fever,—all receive due notice, and their significance is duly estimated.

We quote from the seventeenth lecture, which treats of the diagnosis by physical signs chiefly, the following, upon an important matter which has been somewhat neglected by other writers on Diseases of the Lungs :

“An *infiltration of tuberculous matter* into the pulmonary tissues, sometimes occurs as the primary lesion in the place of the miliary granulations. It is not to be distinguished from the latter form of the disease, except by the physical signs. The infiltration is usually rapid, extensive, and affects frequently the lower and posterior portion of one lung. Hence you may expect to find many of the physical signs of pneumonia, with which, in its acute form, the disease is apt to be confounded. There is marked dulness on percussion, extending perhaps from the base of the lung to the lower angle of the scapula, but not usually passing a vertical line drawn from the axilla downward. The respiratory sounds may be simply feeble and indistinct, but generally you will hear a bronchial respiration; and as I think, possessing, sometimes at least, peculiar characters which distinguish it from the ordinary bronchial respiration of pneumonia. It gives the impression of air passing through fine tubes, and as if drawn through them by a sort of suction. In the early stage it is dry, but as the tuberculous infiltration softens, a mucous rattle is gradually established; and finally, when cavities form, a gurgling of mucus may occur, or even without their formation. In its early stage, especially if the infiltration is very great in degree, it might be confounded with pleurisy. The marked dulness,

the absence of respiratory sound which may occur in this case, would lead you to suspect a pleuritic effusion. But these physical changes will not probably pass the median line drawn downward from the axilla, as they would do, probably, in a case of pleuritic effusion. Neither will you detect egophony. You may, indeed, have your doubts, even after a careful examination; then wait a little before deciding. The future progress of the case will satisfy these doubts. Besides, in these cases, the rational and constitutional symptoms are those of phthisis, not those of pneumonia, or of pleurisy. The attack may be acute—indeed, it generally is so; but still the fever is moderate, the pain in the chest trifling or absent, and there is no characteristic expectoration. Consider also the general condition of the patient. Has he the aspect of phthisis? Is there an unusual acceleration of the pulse? Is there a tendency to night-sweats, and, above all, has hæmoptysis occurred?"

Excellent as this is, it was hardly worth while to repeat it in the next lecture. (See p. 283.)

Did our limits allow, we should be glad to extract other passages of great practical value, having reference to the diagnosis of phthisis, from pneumonia of the apex, pleurisy with abscess, and bronchitis, but we must pass on to other topics.

Dr. Swett, we are glad to observe, regards consumption as a disease admitting of a cure in many instances, and of palliation in almost all. The change which has occurred in the minds of the profession on this point within the last ten or fifteen years, is very remarkable, and has resulted from a more thorough understanding of the pathology and diagnosis of tubercle, and a more critical observation upon the effects of treatment. The consumptive patient is no longer abandoned, as was too often the case formerly, as soon as cavities were ascertained to exist, and even earlier. Even in cases which appear desperate, an effort is now made by scientific practitioners, if not to cure, at least to maintain a *status quo*, and to prolong life to its utmost possible limit. *Irritation* is now understood to be the material element in the progress of phthisis. Having removed as far as possible its causes, we treat its effects not without hope. No one can peruse the late reports of the London Hospital for consumption,* without a feeling of encouragement and just pride. They show by infallible statistics how much may be done, even in a climate confessedly unfavorable, and with all the disadvantages inseparable from a hospital, for the alleviation and cure of this still dreadful disease.

Dr. Swett's directions in regard to the treatment of phthisis, do not differ materially from those of other recent writers. They are not quite as full as we could desire upon some points. In connection with this subject, we find some most excellent remarks upon the influences of climate. These will, we trust, be read attentively, as they are peculiarly adapted to the wants of physicians in this part of the country.

* See British and For. Med. and Chir. Review for Jan. 1849.

In regard to cod-liver oil, the author, while he does not deny that it is sometimes useful, thinks it is destined to share the same fate with antimony, digitalis, and iodine, which "have all had their day of imaginary success, and all been forgotten." We venture to differ from him on this point: not that we regard cod-liver oil as a specific in tuberculous disease; no one, we presume, so regards it; but that it is a most important adjuvant in the treatment of consumption, our own experience, as well as the testimony of some of the highest living authorities, does not permit us to doubt. Much of course will depend upon the judgment with which it is exhibited. To obtain its most satisfactory effect, the digestive organs must be in a good state for its reception. It must not be persisted in when it produces diarrhœa or vomiting. It must be discontinued for a time when it has become loathsome, to be subsequently resumed. Its most happy effect is to be seen when its use is commenced after the subsidence of those temporary periods of irritation which occasionally occur in every chronic case. It is worse than useless to pour down the immense quantities which have sometimes been given. We deem this a matter of so much importance, that we shall introduce here an extract from the late work of Dr. Walshe (no mean authority) in reference to it:

"I began to employ the oil," says Dr. Walshe, "at the Consumption and University College Hospitals seven years ago, urged to the step by the strong advocacy of Dr. Hughes Bennett, and took an early opportunity of testifying to its remarkable powers in the treatment of tuberculous and other scrofulous diseases. The conclusions at which I have arrived concerning its use in phthisis, are as follows: 1. That it more rapidly and effectually induces improvement in the general and local symptoms than any known agent. 2. That its power of *curing* the disease is undetermined;—I mean here, by "*curing*" the disease, its power of causing, along with suspension of progress, such change in the organism generally, as shall render the lungs less prone to subsequent outbreak of tubercles, than after suspension occurring under other agencies. 3. That the mean amount of permanency of the good effects of the oil is undetermined. 4. That it relatively produces more marked effects in the third than in the previous stages. * * * * 5. That it increases weight in favorable cases with singular speed, and out of all proportion with the quantity taken; that hence it must, in some unknown way, save waste, and render food more readily assimilable. 6. That it seldom fails to increase weight. 7. That in the great majority of cases, when it fails to increase weight, it does little good in other ways. 8. That it does not relieve dyspnœa out of proportion with other symptoms. 9. That the effects traceable to the oil in the most favorable cases are: increase of weight, suspension of colliquative sweats, improved appetite, diminished cough and expectoration, cessation of sickness with cough, and gradual disappearance of active physical signs. 10. That in some cases it cannot be taken, either because it disagrees with the stomach, impairing the appetite (without itself obviously

nourishing,) and causing nausea, or because it produces diarrhœa. 11. That in the former case it may be made palatable by association with a mineral acid; and in the latter prevented from affecting the bowels by combination with astringents. 12. That intra-thoracic inflammations, and hæmoptysis are contra-indications to its use, but only temporarily so. * * * 13. Diarrhœa, if depending on chronic peritonitis, or secretive change, or small ulcerations in the ileum, is no contra-indication to the use of the oil; even the profuse diarrhœa caused by extensive ulceration of the large bowel is not made worse by it. 14. The good effects of the oil are, *cæteris paribus*, directly as the youth of those using it,—a singular fact, which probably may one day (when the textural peculiarities of youth and age are better understood.) aid in giving a clue to its mode of action."

Dr. W. considers the brown oil the most efficacious of the three varieties.

But we must leave the subject of phthisis and omit that of cancer, which comes next in order, that we may have space to refer to some of the prominent features of that part of Dr. Swett's treatise which relates to diseases of the heart. This part is introduced by a very interesting lecture upon the heart as it is in health, which comprises a description of its position and the position of its orifices, an account of the different modes adopted for ascertaining its measurements, an explanation of its sounds, and directions for the physical examination, including that by auscultatory percussion as introduced by Drs. Cammann and Clark of this city. The experiments by means of water to show the manner in which the valves perform their functions are well discussed. With the tricuspid it has seldom been possible to prevent regurgitation, owing in part to the flaccidity of the walls of the auricle. and in part, the author thinks, to the probable fact that regurgitation through this orifice is common in health; the valve thus becoming a sort of safety valve, preventing too much blood being thrown into the pulmonary vessels. We give his summary of the causes of the sounds of the heart. He is satisfied that he has, in certain cases of thickening, clearly distinguished by the ear the valvular element of the first sound.

"The first sound is compound, and caused certainly by the tension of the auriculo-ventricular valves, and by the striking of the apex of the heart against the ribs; and probably, also, by the muscular contraction, and by the friction of the blood against the walls of the ventricles.

"The second sound of the heart is simple, and caused by the tension of the valves of the aorta and pulmonary artery during the diastole of the ventricles."

In the following lecture which treats of the signs and symptoms of diseased heart, we find some good arguments drawn from the effects of hypertrophy and pericardial effusion, in support of his view of the mechanism of the first sound. After speaking of the muffling of the sounds by the interposition of fluid, he adds:

"Great hypertrophy of the heart also tends to render the sounds

less distinct, and in two ways: first, the increased thickness of the walls of the heart obscures the valvular element of the sounds; and secondly, the increased size of the organ, by filling up the mediastinal spaces, leaves no room for it to spring forward against the ribs. It presses against the ribs, rather than strikes them. I have been led, from the consideration of these facts, to think that the first sound is chiefly dependent upon the causes to which I have given the chief place in the production of this sound, viz., valvular tension and the striking of the apex against the ribs, because in cases in which this sound is very obscure and feeble, the muscular contraction may be strong, which would increase the muscular sound, as well as that produced by the friction of the blood, if, indeed, they are true elements of the first sound. Again; when the heart is dilated, and the walls thin, the first sound is loud and clear, approaching in character the second sound, although the action of the heart is feeble. In this case it is probably chiefly valvular, for the apex hardly strikes the ribs, the friction of the blood is diminished, and the muscular substance, thin and delicate, and closely applied to the walls of the chest, would more readily transmit a valvular sound from within, while any sound it might generate by its muscular contraction would be comparatively feeble. It is thus that diseased action sometimes strikingly corroborates the phenomena of healthy action."

There have been promulgated since the time of Laennec, according to Dr. Walshe, not less than twenty-nine different theories of the mechanism of the heart's sounds. We believe the one adopted by Professor Skoda of Vienna, is not included in the number, and as it varies in some points from any that have preceded it, we shall give the chief features of it, so far as relates to the first sound, as we find them stated in the recent work of Dr. Herbert Davies, on *Physical Diagnosis*. This distinguished auscultator considers that the first sound is to be regarded as partly ventricular and partly arterial. That the ventricular first sound is due to the stroke of the apex of the heart against the chest-wall, the sudden tension of the auriculo-ventricular valves, and the impulse of the blood upon their tense surfaces during the closure of the orifices to which they correspond, (to these Dr. Davies would add the sound of muscular contraction;) and that the arterial first sound results from the suddenly increased tension of the coats of the aorta and pulmonary artery by the shock of the blood impelled upon them. It will be perceived that Dr. Swett's theory coincides in the most essential particulars with this of Skoda,—that he gives the same prominence to the shock of the apex and the tension of the valves—while Skoda introduces some additional elements, which will, we think, be found important and useful in forming the diagnosis of the morbid sounds.

We had marked numerous passages in this part of Dr. Swett's book for comment and quotation, but we must confine ourselves to a few. Suffice it to say, however, that we consider this as by far the best portion of the work. It has evidently had more labor expended upon it than other parts. It is not taken so directly from the ste-

nographer's notes of extempore lectures delivered ten years since; (this, the preface informs us, was the basis of the work—and to the stenographer, we fancy, we are to attribute some of the bad spelling which occurs in the first portion of the book, "*hemophthisis*," for example, instead of *hæmoptysis*, &c). It is richer in cases, always interesting and well told, and it covers each subject more completely than does the portion on the lungs, if we except that part which relates to tubercles.

In the treatment of acute pericarditis and endocarditis, the author prescribes the usual plan by antiphlogistics and mercury, actively employed. He makes, however, the following exceptions which evince good judgment:

"You will sometimes find cases of acute pericarditis benefited by a treatment directly opposed to the antiphlogistic. When the disease occurs in delicate or enfeebled constitutions, when it has been too actively treated at the commencement, when it has co-existed with inflammation of other organs and a state of anemia or exhaustion has followed, the progress of the cure may cease from the want of reactive power in the system. The case, examined from day to day, presents no improvement in the rational symptoms, or in the physical signs. The patient grows more pale and feeble, a tendency to œdema and night-sweats ensues. You find that your antiphlogistic remedies rather aggravate than improve the condition of the patient. It is now time to change your plan of treatment, and to administer tonics with moderation, allowing, at the same time, a more nutritious diet. The iodide of potassium, or the iodide of iron, either separately or in combination, and united with the decoction of sarsaparilla, are, I think, the best remedies. At the same time, sleep may be procured at night and irritation quieted by small doses of opium. Soup, solid animal food, and even a little wine, may be useful in such cases.

"There are cases which may be benefited by a mixed treatment. Mercury may be given in combination with tonics. In such cases, the protiodide of mercury may be used advantageously with the iodide of potassium or of iron. This treatment is especially indicated in the treatment of acute cases which have been neglected at an early period, and have never been brought under the mercurial influence. It is also indicated in the treatment of chronic pericarditis, when these remedies may be combined with diuretics, and other means calculated to promote the absorption of effused fluids. Blisters are, I think, particularly indicated in this form of the disease, especially if it is attended by pain in the precordial region. They are often used in the acute form of the disease, but they are most useful in neglected cases, or in the chronic form of the disease."

Two lectures are occupied with the subject of "Enlargement of the Heart." We like much the author's observations upon this condition. He thinks that most writers have confused rather than simplified the matter, by too systematic an arrangement and division of the subject into Hypertrophy, Dilatation, &c. While admitting the ex-

istence of simple hypertrophy and simple dilatation, he doubts whether there are any certain indications by which they can be severally determined during life, and whether if recognized it would lead to any practical results. The great object is to ascertain whether enlargement exists. He doubts, moreover, whether "concentric hypertrophy," so called, should be recognized as a morbid condition, having never met with an unequivocal case of it. Where he has met with this condition it has almost invariably been in cases of sudden death from hæmorrhage, the patient dying during the systole. Allusion is made to the experiments of Cruveilhier as almost conclusive on this point. He further alludes to the influence of the stasis of blood in the cavities of the heart, during a prolonged agony, as producing the opposite condition, viz.: apparent dilatation.

The causes of enlargement of the heart having been spoken of, and which may all be reduced to one, namely, an impediment of some sort to the circulation, the author remarks that in tuberculous disease of the lungs the heart is not larger but smaller than the average. In this case, although obstruction to the pulmonary circulation exists, quite as great as in emphysema, which often produces enlargement, yet this is more than compensated for by a diminution in the quantity of the blood.

A graphic description of that perplexing affection known as *angina pectoris* will be found in this connection. The author does not attempt to give a perfectly satisfactory explanation of its causes, but in common with other authorities ascribes to it a neuralgic character, in connection with a weakened condition of the heart.

Dr. Swett regards displacement of the apex as the most important sign of enlargement, and remarks that:

"Generally, it is easy to find the point where the apex strikes both by the touch and by the eye. You might suppose that it would be easier to ascertain this point in the enlarged than in the healthy heart, but it is not always so. It would be a great mistake to suppose that in every case of enlargement there is strong action of the heart. In many cases, perhaps in most cases of advanced enlargement, the action of the heart is feeble. The heart becomes worn out, if I may so speak, and, like a tired muscle, acts feebly; so that if you feel for the apex, you may not find its striking point. There is another reason why this may happen: the heart, as it enlarges, fills up the mediastinal spaces, so that there is no longer any room for the apex to spring forward against the ribs—the whole surface of the heart lies against the walls of the chest. Thus, in cases of enormous enlargement, even when this is chiefly hypertrophy of the muscular substance, there is rather an obscure heaving than a distinct impulse."

From the chapters on valvular disease we extract the following interesting cases:

"As a general rule, the changes in the valves and in the corresponding orifices being gradual, the physical signs connected with them are gradually developed. But this is not always the case. A

striking case has recently occurred to me, in which the aortic valves, weakened by inflammatory changes in their structure, during the convalescence from an attack of fever, suddenly gave way, so as almost to destroy entirely the action of these valves. Regurgitation was almost as great as if no valves had existed. In this case no sound was developed; the regurgitating orifice was too large for that. But there was another reason. The heart was overpowered by the congestion of the left cavities, for the quantity of blood that flowed back into the left ventricle during the diastole, must have been nearly as great as that expelled by the previous systole. Examination disclosed a very rapid and tumultuous action of the heart, a confused, rushing sound in place of the natural sounds, while the pulse retained considerable strength, and was regular in its action. The dyspnoea was very marked, and the patient soon expired. This sudden rupture of a valve, but in a less degree, is probably not a very rare occurrence, and then the signs of regurgitation might suddenly ensue. I think I have known this happen even when no evident previous disease existed, as after a sudden effort, in which a portion of a valve, or perhaps a tendon connected with a valve, had suddenly been ruptured, and a regurgitating murmur, with symptoms of disturbed circulation, ensued. I recollect very well the case of a child, about eight years of age, who was suddenly seized with symptoms of heart disease, after attempting to carry some heavy books up stairs. In this case I noticed a murmur indicating mitral regurgitation, which continued more than a year, and finally ceased."

And the following touching venous pulsation:

"If obstruction of the mitral orifice reveals itself but seldom by an endocardial sound, how much less frequently should you expect to find it in obstruction of the orifice of the tricuspid valve, since the action of the right side of the heart is naturally so much more feeble than that of the left side! The endocardial sound, indicating imperfect closure of the tricuspid valve, may possibly occur; but when it does not, you may notice another sign which indicates the same thing: this is the pulsation of the jugular veins, synchronous with the pulsation of the heart. This symptom, however, I think, often occurs towards the termination of heart disease, simply as the effect of a dilatation of the orifice beyond the ability of the valves to close; the effect of distention of this, the weakest portion of the heart. I suppose the same pulsation would be noticed in the pulmonary veins, if they could be seen or felt, in cases of regurgitation through the orifice of the mitral valve."

While the author admits that the condition of the pulse may sometimes contribute to the certainty of the diagnosis in enlargement and valvular disease, he thinks it is not to be much depended on, as no condition of the pulse is characteristic of any morbid change. We fully agree with him on this point notwithstanding that we have several times had our attention first drawn to cardiac difficulty, and even been led to suspect its exact nature from the state of the pulse, and we presume this is not unfrequent. But that it will vary in

different cases of the same affection and at different times in the same case, we think every careful observer will admit.

A selection or two from the chapters on Aneurism of the Aorta must close this review. First, as to the pathological changes in the vessel. Dr. Swett believes that the patches of lymph (the result of inflammation), which subsequently assume the form of cartilage, may undergo the process of calcification, like atheroma, and says that most pathologists agree with him and that analogy confirms it. Bizot, however, he admits, is of a different opinion, and so is Hasse. The latter is very explicit and decided upon this point, asserting unqualifiedly that the semi-cartilaginous formation *never* ossifies. The place of deposit of these two products is different, one being formed upon the free surface of the lining membrane, while the other is beneath it, in the elastic coat: their original constitution is different, and the natural presumption is that their ultimate terminations would be different. Moreover, we are unable to discover the "analogy" to which Dr. Swett alludes. If he has in view the bony change which the cartilages of the ribs and other cartilaginous structures undergo in advancing age, we think the analogy will not hold good. For, in that case it is a genuine, normal tissue which undergoes a change. It will not do to argue from that to an adventitious product of inflammation, which resembles it indeed in appearance, but is no more true cartilage than the ossiform plates of atheroma are true bone. On the other hand there is no reason why the two conditions should not succeed each other at the same points in the artery, but certain evidence to show that they do: that atheromatous deposits sometimes take place in the subserous tissue at points where the fibrinous exudation exists upon the lining membrane; and that inflammation and its results may take place in and upon the lining membrane beneath which the atheromatous deposit already exists. They are thus found simultaneously, and this circumstance has led many observers into error.

In regard to that form of aneurism first described by Mr. Skele-ton, of Dublin, according to the author, but previous to him by Laennec, as the *dissecting aneurism*, Dr. Swett supposes that gentleman to have been in error when he described it as effecting a separation between the middle and external coats of the artery. His reason for thinking so is that in two cases examined by him the middle coat was "split" in two, and not separated entire from the external coat.

"In these cases a recent fissure was noticed near the commencement of the aorta, which had penetrated the internal coat, and, to a certain depth, the middle coat. Starting from this fissure, the middle coat was split, so as to form a canal filled by blood. In one of the cases this splitting of the middle coat was so considerable as to extend nearly to the diaphragm, and it embraced one-half the circumference of the artery. Indeed, in this case another fissure was noticed below, opening into the cavity of the vessel from the false passage, so that in fact the blood may have circulated through the whole length of the thoracic aorta in two parallel channels placed side by

side. Whatever may be the cause of this singular change, it was evidently of recent formation. The lining membrane presented no unusual appearances, while the middle coat, although deeply stained by blood and evidently softened, still preserved its fibrous appearance. In these cases death was sudden, from the rupture being continued into the pericardium, which was found filled with blood, and in one case it occurred after a considerable muscular effort."

We prefer to doubt the correctness of Dr. Swett's opinion in regard to this splitting of the middle coat. Our reasons are as follows: The inner surface of nearly all aneurisms is covered by a false membrane whose fibrous structure makes it resemble very closely the coats of the vessels. The elastic coat of arteries is composed of a modification of the yellow fibrous tissue, and exhibits all the characters of this tissue except that the fibres are *more minute and less easy of separation*.* It would be easy then for Dr. Swett to mistake such a false membrane for a portion of the middle coat, and we believe that he has done so. But the strongest reason for supposing him to be in error springs from the structure of the tissue itself. The fibres of the elastic coat are shown by the microscope to interlace with each other in a most remarkable manner. This is unequivocally shown in all the representations of the tissue that we have seen, and it renders it almost impossible to believe that a "splitting" could occur in the manner described by Dr. Swett.

The work closes with an appendix describing the microscopic constitution of tubercle and cancer, and two plates, exhibiting the appearances under the microscope.

In concluding this examination of Dr. Swett's treatise we would repeat the opinion we have already expressed as to its general excellence. It is a pleasant companion and a safe guide; not as full in some particulars as we could have desired, but avoiding many useless details and simplifying and elucidating much that was obscure and entangled. It is a firm basis upon which the diligent student may erect a solid superstructure of knowledge. Shunning matters in controversy, it is a substantial statement of settled truths. It will materially enhance the author's reputation as a writer, a lecturer and a practical physician.

S. C. F.

BIBLIOGRAPHICAL NOTICES.

ART. X.—*A Treatise on the Practice of Medicine*. By GEORGE B. WOOD, M. D., Professor of the Theory and Practice of Medicine in the University of Pennsylvania; President of the College of Physicians of Philadelphia; One of the Physicians of the Pennsylvania Hospital, etc. etc. Third Edition, in two volumes. Philadelphia: Lippincott, Grambo & Co. 1852. 8vo. pp. 847-853.

IN calling the attention of our readers to a new edition of this treatise, it is only necessary for us to allude in a general manner to

* See the lectures of Mr. Quekett upon Histology, just issued.

the additions and revisions the work has undergone. The main features of the work remain unchanged, although nearly every section is posted up in the improvements effected during the last three years; this will be particularly observed under the headings of inflammation, fatty degeneration, carcinoma, epidemic cholera, Bright's disease, etc. etc. "Among the additions may be mentioned brief notices of several diseases, which, from their rarity, or total absence in this country, or from yet being unknown as distinct affections, were not described in former editions. Such are the relapsing fever of Dr. Jenner, the leucocythemia of Prof. Bennett, the dengue, and certain cutaneous affections, as trichosis, lupus, and pellagra." In the changes which have been wrought, this edition has been extended by nearly eighty additional pages, thus giving opportunity of recording all established improvements, and at the same time rendering it still more worthy of the approbation of the profession. We recommend it as a *good* treatise; a happy effort of a learned physician; a work pre-eminently adapted to the wants of the practitioner; a work that has and will continue to honor the profession, and its accomplished author.

ART. XI.—*The History, Diagnosis, and Treatment of the Fevers of the United States.* By ELISHA BARTLETT, M. D., Professor of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons of the University of the State of New-York; Member of the American Academy of Arts and Sciences, etc. etc. Third edition, revised. Philadelphia: Blanchard & Lea, 1852. 8vo., pp. 595.

WE are pleased to see a new edition of this admirable work, the work which forms the foundation of the distinguished author's literary reputation. The greater amount of additions made to this edition will be found in the chapters on *typhoid* and *typhus* fevers, where the papers of Dr. Wm. Jenner of London are cited as *the principal* contributions made since the date of the second edition and drawn largely upon in support of the "wide and fundamental differences" which the author believes to exist between these forms of fever. The question of the identity or non-identity of these forms of continued fever will for a long time continue to be a mooted one—till at least the differential variations of epidemics of continued fever are better understood and appreciated.

The typography and paper of this volume are all that could be desired—decidedly superior to that of the previous editions; and as we regard this treatise the best extant on our fevers, we commend it to the continued confidence and support of the profession.

ART. XII.—*The Principles of Surgery.* By JAMES MILLER, F. R. S. E., F. R. C. S. E., Author of *A Treatise on the Practice of Surgery*; Professor of Surgery in the University of Edinburgh etc. etc. Third American from the second and enlarged Edin

burgh edition. Illustrated by two hundred and forty engravings on wood. Revised, with additions. By F. W. SARGENT, M. D., Member of the College of Physicians of Philadelphia; Author of "Minor Surgery," etc. etc. Philadelphia: Blanchard & Lea. 1852. 8vo., pp. 751.

THE deserving merits of the first edition of this work obtained for it a high position among the classics of Surgical literature. The ample corrections and large additions made to the present by author and editor, cannot fail to insure for it much praise and sustain the increased expectations of the learned in Surgery. We recommend it to both student and practitioner, feeling assured that as it now comes to us, it presents the most satisfactory exposition of the modern doctrines of the principles of Surgery to be found in any volume in any language.

ART. XIII.—*Lectures on Histology, delivered at the Royal College of Surgeons of England, in the Session of 1850-51. Elementary Tissues of Plants and Animals.* By JOHN QUEKETT, Assistant Conservator of the Museum of the Royal College of Surgeons, England. Illustrated with one hundred and fifty-nine woodcuts. London and New-York: H. Bailliere. 1852. 8vo., pp. 215.

THIS volume is a revised edition of the course of lectures by the author, which appeared in the Medical Times for 1851. These lectures, eighteen in all, are a most valuable addition to histological science. We are pleased to see them before the public in their present form, and bespeak for them the favorable attention of microscopical students and observers.

ART. XIV.—*Obstetrics: the Science and the Art.* By CHARLES D. MEIGS, M. D. Professor of Midwifery and the Diseases of Women and Children in Jefferson College, Philadelphia; lately one of the Physicians of the Lying-in Department of the Pennsylvania Hospital; Vice-President of the Philadelphia College of Physicians, etc. etc. Second edition, revised. With one hundred and thirty-one illustrations. Philadelphia: Blanchard & Lea. 1852. 8vo., pp. 759.

WE have here a new and somewhat improved edition of Professor Meigs' best book. The changes particularly manifested in this edition are seen in the relation of new cases, the revision of the chapter on cyanosis, and in the substitution of a new chapter on child-bed fever in the place of the chapter on puerperal fever in the previous edition. The substitution of this chapter is alone sufficient to commend this edition to the student as well as practitioner.

PART THIRD.

AMERICAN MEDICAL RETROSPECT.

Abstract of Proceedings of the American Medical Association, at its late Meeting, held at Richmond, Va., May 4, 1852.—The Association met in the Second Presbyterian Church, at 11 o'clock. The President, Dr. Moultrie, of Charleston, S. C., in the chair.

Dr. James Beale, Chairman of the Committee of Reception, welcomed the delegates to the city of Richmond.

Dr. Haxall, Chairman of Committee of Arrangements, read a list of the delegates who were present, and registered.

Dr. Hays, of Pa., offered the following resolution :

Resolved, That a committee of one from each State, to be selected by its delegation, be appointed to nominate suitable officers for the Association.

The resolution having been adopted, a recess of ten minutes was taken, to allow the delegation opportunity to appoint the Nominating Committee.

At the expiration of the recess, the President announced the Nominating Committee.

After the calling of the roll, the President delivered the Annual Address.

The Nominating Committee then reported the following gentlemen Officers of the Association for the present year :

For President—BEVERLY R. WELFORD, M. D., of Va.

For Vice Presidents—JONATHAN KNIGHT, M. D., of Conn. ; JAMES W. THOMPSON, M. D., of Del. ; THOS. S. SIMONS, M. D., of S. C. ; CHAS. A. POPE, M. D., of Missouri.

For Treasurer—D. FRANCIS CONDIE, M. D., Pa.

The officers thus nominated were duly elected, and the committee requested to nominate Secretaries, and to decide upon the next place of meeting.

On motion, Drs. John L. Atlee, of Pa., Haxall, of Va., and Eve, of Tenn., were appointed a committee to wait upon Dr. Welford, and announce his election, and conduct him to the chair. Dr. Welford having taken the chair, returned his thanks for the honor conferred upon him.

Dr. Haxall, of Va., offered the following preamble and resolution, which were unanimously adopted :—

“The American Medical Society in Paris, being so constituted that it would be entitled to representation if it existed in this country, and as it is recognized abroad as an American institution :

Resolved, That the delegates accredited to the Association by the American Medical Society in Paris, be, and are hereby invited to take seats in this body.”

Dr. Paul Lajus offered the following resolution, which was adopted :

Resolved, That Dr. Brown Sequard, of Paris, be invited to occupy a seat among the delegates at the present meeting of the Association.

Dr. Isaac Hays read the Report of the Committee on Publication, and the Report of the Treasurer. They were received, and the following resolutions appended to the report of the Committee of Publication were unanimously adopted :—

Resolved, That the assessment for the present year be three dollars.

Resolved, That the Committee of Publication be authorized to fix the price at which the Transactions for the present year will be furnished to such of the members of the Association as shall remit the amount decided upon by the committee within a specified time, to be fixed by them. And that it shall be the duty of the said committee to issue a circular, informing the members of the terms upon which the Transactions will be furnished them.

Resolved, That the Committee be further authorized to take such measures in the disposal of the copies of the Transactions remaining after all such members are supplied, as shall comply with the terms set forth in the circular of the Committee, as they may deem expedient.

Dr. Hayward presented the report from the Committee on Prize Essays, and broke the seal of the packet, containing the name of the author of the essay entitled, “*On Variations of Pitch in Percussion and Respiratory Sounds, and their application to Physical Diagnosis*,” which was deemed worthy of the prize. The author proved to be Dr. Austin Flint, of Buffalo, N.Y., to whom the prize was awarded, and the report referred to the Committee of Publication.

The Report of the Committee on the Medical Botany of the U. S. for 1850–51, from Dr A. Clapp, Conn., was presented and referred to the Committee of Publication.

Dr. R. W. Haxall, of Va., read a short report of the progress of the Committee on the Epidemics of Virginia and North Carolina, and asked to be continued ; which request was granted.

On motion of Dr. Gooch, the Editorial Corps were invited to take seats on the floor.

The Secretary stated that he had transmitted copies of the preamble and resolutions of 1850–51, relative to assimilative rank of the medical staff of the army and navy, to the several departments ordered by the resolutions, and that the Chief of the Bureau of Medicine and Surgery at Washington had approved the course recommended by the Association, in a letter, which was read. Dr. Pinkney, of the Navy, asked leave to read a memorial which he had

prepared to present to Congress on this subject, and which he sustained in a lengthened and forcible speech; after which Dr Cox, of Md., offered resolutions expressive of the approval of the Association in the matter, &c., &c.,—which resolutions were referred to a special committee.

Dr. Simons, of S. C., offered the following resolutions:

Resolved, That the American Medical Association do memorialize Congress to require all vessels bringing steerage passengers over, to have a surgeon on board.

Resolved, That a committee of this Association be appointed to draw up a memorial to Congress, making such suggestions as they may deem fit as regards the importance of this measure.

The Report of the Committee upon the Constitution—being the special order—Dr. Hays, chairman of the committee, made a report. Dr. T. H. Yardley, a member of the committee, presented a counter-report. Much discussion ensued, and many resolutions and amendments were proposed, and withdrawn in favor of the following resolution, offered by Dr. Thomas, of Md., and amended by Dr. Stewart, of N. Y.

Resolved, That the two reports on proposed alterations of the Constitution, be referred to a committee of three, to be appointed by the chair, with instructions to report to-morrow morning in definite and proper form, such amendments as will embrace the views set forth in the reports, and such other views as may appear to them advisable.

The resolution was adopted.

The Secretary read the following communication from the New-York Academy of Medicine, which, on motion, was referred to the Publishing Committee, and ordered to be printed.

NEW-YORK ACADEMY OF MEDICINE,
NEW-YORK, April 22, 1852.

SIR:—I have the honor to transmit to you a copy of the preamble and resolutions adopted at a regular meeting of the New-York Academy of Medicine, held April 21, 1852:

Whereas the Clinics, now held at the Medical Colleges, as at present conducted, are, or may be made tributary to the private interests of the professors, at the expense of other and younger members of the profession: depriving them, by an odious monopoly, of practice and operations, and often of fees to which they are justly entitled:

Therefore Resolved, As the sense of this Academy, that to prescribe or practise upon the legitimate patients of any other physician, knowing them to be such, although done gratuitously at a Clinic, is equally unwarrantable and unprofessional, with similar interference with the patients of another in private practice; and in either case, is a violation of the code of medical ethics adopted by this body.

Resolved, That the possible perversion of these Clinics to the private emolument of those conducting them, by transferring patients to their private offices, and then exacting fees from those found able to pay, divests the Clinics of all pretext for professing to be public charities, and should be scrupulously guarded against in all our colleges by stringent rules.

Resolved, That a copy of these resolutions be sent to the authorities of the several medical colleges in this city.

Dr. Eve, from the Committee on Nominations, recommended the following additional Officers for the ensuing year :—

For Secretaries—DRS. P. CLAIBORNE GOOCH, of Va., and EDW. L. BEADLE, of N. Y.

Committee of Publication.—DRS. D. F. CONDIE, of Pa. ; ISAAC HAYS, of Pa. ; P. C. GOOCH, of Va. ; E. L. BEADLE, of N. Y. ; ISAAC PARRISH, of Pa. ; G. EMERSON, of Pa. ; G. W. NORRIS, of Pa.

Committee of Arrangements.—DRS. F. CAMPBELL STEWART, of N. Y. ; JOHN WATSON, of N. Y. ; WM. ROCKWELL, of N. Y. ; JAMES R. WOOD, of N. Y. ; ROBT. WATTS, jr., of N. Y. ; ALFRED POST, of N. Y. ; JOHN G. ADAMS, of N. Y. ; H. D. BULKLEY, of N. Y.

On motion, the Report was received, and the gentlemen named were unanimously elected Officers of the Association.

The Report of the Committee on "The Blending and Conversion of the Types of Fever," was next read by Dr. C. B. Williman, S. C. (in place of Dr. Dickson, not present), and referred to the Committee of Publication.

Dr. Hayward, of Mass., presented and read a Report upon the Radical Cure of Hernia, which was also referred to the Publishing Committee.

Dr. Greene, of N. Y., offered the following resolutions :—

Resolved, That at all future meetings of this Association, the reports of committees and all contributions on scientific subjects, occupying more than ten pages of quarto post manuscript, be accompanied each by an abstract or synopsis embracing the principal points of such report or paper, which abstract or synopsis may be read before the Association.

Resolved, That the above resolution be transmitted to the Chairman of each Committee.

The thanks of the Association were presented to the physicians and citizens of Virginia, to the Trustees of the Second Presbyterian Church, to the Committee of Arrangements, and to the Managers of the Danville Railroad Company, for their kindness and attention to its members.

The following committee was appointed to report what action this Association should take in order to procure, for distribution among the medical profession of the United States, a large edition of the Medical Statistics of the Country, as furnished by the late census : viz., Drs. Simons, of S. C. ; Boyle, of D. C. ; Sumner, of Conn.

The following committee was appointed to report on the Relation between Climate and Pulmonary Consumption : viz., Drs. D. F. Condie, R. E. Rodgers, J. M. Smith, Moultrie, and McGuire.

On motion of Dr. Rockwell, it was *Resolved*, That the committee to memorialize Congress on the subject of compelling passenger vessels to carry surgeons, be directed also to call their attention to the importance of giving to each steerage passenger a certain amount of space between decks.

The Nominating Committee reported the following Special Committees :—

D. F. Condie, Philadelphia, Causes of Tubercular Disease.

James Jones, New-Orleans, The Mutual Relations of Yellow and Bilious Remittent Fevers.

R. S. Homes, St. Louis, Missouri, Epidemic Erysipelas.

Charles D. Meigs, Philadelphia, Acute and Chronic Diseases of the Neck of the Uterus.

J. P. Jervey, Charleston, South Carolina, Dengue.

Daniel Drake, Cincinnati, Milk Sickness, so called.

Dr. Lopez, Mobile, Prevalence of Idiopathic Tetanus.

George B. Wood, Philadelphia, Diseases of Parasitic Origin.

R. D. Arnold, Savannah, the Physiological Peculiarities and Diseases of Negroes.

Joseph Carson, Philadelphia, Alkaloids which may be substituted for Quinia.

S. D. Gross, Louisville, Ky., Results of Surgical Operations for the Relief of Malignant Diseases.

James R. Wood, New-York, Statistics of the Operation for the Removal of Stone in the Bladder.

Alexander H. Stevens, New-York, Sanatory Principles applicable to the Construction of Dwellings.

G. Emerson, Philadelphia, Agency of the Refrigeration produced through Upward Radiation of Heat, as an Exciting Cause of Disease.

Henry J. Bigelow, Boston, The Best Means of making Pressure in Reducible Hernia.

A. T. B. Merritt, Richmond, Cholera and its Relations to Congestive Fever; their Analogy or Identity.

Usher Parsons, Providence, R. I., Displacement of the Uterus.

H. F. Campbell, Augusta, Ga., Typhoid Fever.

Worthington Hooker, Connecticut, Epidemics of New-England and New-York.

John L. Atlee, Lancaster, Pa., Epidemics of New-Jersey, Pennsylvania, Delaware, and Maryland.

R. W. Hazall, Richmond, Va., Epidemics of Virginia and North Carolina.

William M. Bolling, Montgomery, Ala., Epidemics of South Carolina, Georgia, Florida, and Alabama.

Edward H. Barton, New-Orleans, Epidemics of Mississippi, Louisiana, Texas, and Arkansas.

Dr. Sutton, Georgetown, Ky., Epidemics of Tennessee and Kentucky.

Thomas Reyburn, St. Louis, Mo., Epidemics of Missouri, Illinois, Iowa, and Wisconsin.

George Mendenhall, Cincinnati, Ohio, Epidemics of Ohio, Indiana, and Michigan.

Committee on Volunteer Communications.

Joseph M. Smith, }

John A. Swett, }

Willard Parker, }

Gurdon Buck, }

Alfred C. Post, }

all of New-York.

The titles of the Reports on Epidemics and other special reports were read, and they referred to the Committee on Publication.

The subject of altering several important provisions of the Constitution having been presented in a majority and minority report, both submitted by different portions of a committee, to whom the subject was referred last year, claimed a considerable share of attention in the Association, and much interesting discussion ensued, in which some of the most distinguished men of our profession participated; and the committee who were charged with condensing the subjects of both reports into one, so far as they could be made compatible with each other, presented a series of well-digested propositions, which, after free discussion and some alterations, were laid on the table till next year, then to be taken up and finally acted upon. These propositions embrace the absorbing question of delegation, and present a conservative policy, which may probably be adopted, as it is evident the Association is not yet fully prepared to exclude the schools from a representation at its meetings.

The Committee suggest that delegates shall be appointed for one year, that they shall hold their appointment from County and State Medical Societies, from chartered Medical Colleges, Hospitals, and permanent voluntary medical associations in good standing with the profession, and from the medical staffs of the army and navy. The county, district, and voluntary chartered medical societies, shall have the privilege of sending one delegate for every ten of its resident members, and one more for every additional fraction of more than one-half that number; while every State Society may send four delegates; and, in those States in which County and District Societies are not generally organized, they shall be entitled to send one for every ten regular members, and one more for every additional fraction of more than half of this number. No Medical Society shall have the privilege of representation which does not require of its members an observance of the code of ethics adopted by the Association. Every chartered Medical College, acknowledging fealty to the code of ethics, having six professors, and giving a course of lectures of not less than sixteen weeks annually, requiring also of students three years' study; and hospitals, and lunatic asylums, having accommodations for one hundred patients, shall be entitled each to one delegate. The University of Virginia, in consequence of its peculiar mode of instruction and examination, was mentioned as worthy of representation, notwithstanding it does not comply, in some respects, with the terms of the proposition; but the exception in its favor is only to be continued so long as the present system of teaching shall remain in force.—*N. J. Med. Rep.*

Croup.—*Compound Tincture of Chloroform as a Remedy.*—(*Boston Soc. for Med. Improvement.*)—Dr. STRONG was consulted, late on Sunday evening, in reference to a case of alleged croup. The parents had been familiar with the disease. After inquiring respecting the symptoms, it was thought best to send directions for the treatment, with the understanding that it should be tried, and if without

any relief, Dr. S. was to be summoned in the night—otherwise, to visit next morning. The child is about two years old. The prescription for the night was hydrargyri subsulphatis ʒss.; pulvis ipecacuanhæ ʒj.; pulvis ipecac. et opii, gr. vj.; misce et div. in chart. no. vj.; one powder to be given every fifteen minutes until frequent vomiting was induced; the feet to be first placed in warm water; and in case of no relief, or if there should be a temporary relief, and then a return of symptoms, the same to be repeated after an interval of two hours. Dr. S. saw the child the next forenoon, and learned that the emetic had been taken, with some temporary relief; the child, at his visit, had quick, laborious breathing, with a croupy cough, aggravated from time to time, and the peculiar, dry, sonorous character of the respiration incident to the worst forms of croup; the countenance, at times, livid. The throat, carefully examined by sunlight, showed white lymph upon both tonsils and over the fauces. Having treated other cases like this without avail, Dr. S. was strongly impressed with the idea that the child would die, and so expressed himself. A cathartic was prescribed, the bowels being confined; and compound tincture of chloroform was freely applied, by cloths saturated with it, to the neck, and the fauces and tonsils were wetted with it by means of a linen “swab.” The cloths were re-moistened and applied as soon as they became dry; and this was persevered in through the day, the applications and swabbing being attended to perhaps as often as once an hour. At a visit made that evening, the same treatment was directed for the ensuing night, with the addition of a grain of Dover’s powder, which was to be repeated every two to four hours, as the symptoms were, or were not urgent.

Next morning the child was better; there had been no attacks of severe dyspnœa; and there were intervals when the breathing was nearly natural. The same treatment was still continued; the application to the throat to be made at longer intervals: in the evening of this day all the croupy symptoms were gone, and the child recovered rapidly. Auscultation detected evidences of bronchitis.

The compound tincture of chloroform has been used by Dr. S. in incipient inflammations—as in bubo, in inflamed glands of the neck, paronychia, and deep-seated inflammation of the hand; also, in inflamed and ulcerated gums; and, so far, with most marked advantage.—*Amer. Jour. Med. Sci.*

Ligation of the Primitive Iliac Artery.—In the *New-Orleans Medical and Surgical Journal* for May, is reported a case of an Irishman, aged twenty-five years, who was admitted into the Charity Hospital for aneurism of the left femoral and external iliac arteries. On the 27th of March, Dr. A. J. Wedderburn ligated the primitive iliac. During the operation “severe hæmorrhage took place;” and it was found that the aneurism extended to within one inch and a half of the bifurcation of the primitive iliac artery. No chloroform was administered, and the patient complained much during the

operation. On the 29th, evidence of gangrene below the knee existed. On afternoon, the 31st, the patient died—gangrene having extended as far as the hip. Post-mortem examination revealed thickening and degeneration of the tissues about the seat of the ligature, together with enlargement of the lymphatics. Dr. Wedderburn is disposed to question the success of this operation in any case; and he doubts if a cure has ever followed this questionable operation.

Removal of a Pessary after forty-one years' residence in the Pelvis.—In the *Ohio Medical and Surgical Journal* for May, Dr. F. T. Hurxthal reports the case of a German woman, aged 73 years, who, in 1811, after a confinement, had prolapsus uteri; and upon consulting a midwife (in Germany), she introduced a ring into the vagina, which she said was made of wood covered with beeswax. It had never been removed, nor had she ever felt the least inconvenience from it, until, on the second day of an attack of pneumonia, whilst coughing violently, she felt some pain in the pelvic region, which increasing, was followed by an exceedingly fetid vaginal discharge. The pessary was removed with difficulty, by division of it by scissors. It was 3 3-8 inches in its long diameter, and 2 7-8 in its transverse diameter. On removal, it presented the appearance of a roughened stone, in some parts over an inch in thickness. The recovery was speedy and complete.

New-York Journal of Pharmacy.—This is the title of a monthly journal devoted to one of the auxiliary branches of Medical Science, recently started in this city. It is "published by authority of the College of Pharmacy of the City of New-York," and edited by Dr. B. W. McCready, a physician already favorably known in this department of Medicine, assisted by a Publishing Committee, consisting of several of our most distinguished druggists and apothecaries. We welcome it to our exchange list, and shall rejoice to see it meet with an extensive encouragement, such as its merits deserve.

OBITUARY.

DEATH OF JOHN S. WILEY, M. D., U. S. N., on the 20th of June, at his residence in Brooklyn, in the 57th year of his age.

DEATH OF DR. G. L. SPENCER, at Triangle, Broome County, on the 18th of June, aged 58. Dr. S. had been in successful practice in Triangle for thirty-five years. He was esteemed by an extensive acquaintance as a highly honorable man, and an attentive and successful physician. He literally died with his harness on, and fell a sacrifice to his zeal in search of pathological truth. While performing an autopsic examination of one of his patients, he received a slight wound with the point of a needle, from the effects of which he died on the eighth day, with the ordinary symptoms of "dissection wounds."

TO READERS AND CORRESPONDENTS.

The report of a case of "Anomalous Foreign Body in the knee-joint," by J. W. S., we decline publishing. It has already appeared in two of our exchange journals since its receipt, and the issue of our July number. Such a course savors too much of a spirit of advertising, to accord with our notions of medical ethics.

The following works have been received :

Clinical Reports on Continued Fevers, based on Analyses of One Hundred and Sixty-four Cases; with remarks on the management of continued fever; the identity of typhus and typhoid fever; relapsing fever, diagnosis, &c. To which is added a memoir on the transportation and diffusion, by contagion, of typhoid fever, as exemplified in the occurrence of the disease at North Boston, Erie County, N. Y. By AUSTIN FLINT, M. D., Professor of the Principles and Practice and of Clinical Medicine in the University of Buffalo. Geo. H. Derby & Co., 1852: 8vo. pp. 390. (From the Publishers.)

Operative Surgery Illustrated; containing more than Nineteen Hundred Engravings; including two hundred original and fifty colored drawings; with explanatory text, by R. U. PIPER, M. D. Also a chapter upon the Use of Ether in Surgery. By HENRY J. BIGELOW, M. D., Professor, &c. Boston: Ticknor, Reed & Fields, 1852: 12mo. pp. 384. (From the Publishers.)

Records of Maculated Typhus, or Ship Fever, with Suggestions of Treatment; being the result of a series of observations made during the prevalence of this disease at South Boston and Deer Island Hospitals, in 1847-48. With Plates. By J. B. UPHAM, M. D. New-York, 1852: 8vo. pp. 60. (From the Author.)

Transactions of the Medical Association of the State of Missouri, at its Second Annual Meeting. St. Louis, April 19th, 20th, and 21st, 1852. Vol. ii. St. Louis, 1852: 8vo. pp. 116. (From the Association.)

Transactions of the Twenty-ninth Annual Meeting of the Medical Society of Virginia. Together with the President's Annual Address and the Constitution of the Society. Richmond, 1852: 8vo. pp. 62. (From the Society.)

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia, from May 4th to July 6th, 1852, inclusive. Philadelphia: Lippincott, Grambo & Co., 1852: 8vo. pp. 32. (From the Publishers.)

The Duties of Medical Men to Themselves and to their Profession. An address before the New Hampshire Medical Society. By the President, Professor E. R. PEASLEE, A. M., M. D. Published by order of the Society. Concord, 1852: 8vo. pp. 16. (From the Author.)

Practical Chemistry, a Branch of Medical Education; considered in a brief letter to his class. By ALFRED L. KENNEDY, M. D., Lecturer in the Philadelphia School of Chemistry. Philadelphia, 1852: 8vo. pp. 11. (From the Author)

An Address read before the Tennessee Medical Society, at its Twenty-third Session. By JOHN M. WATSON, M. D., Professor of Obstetrics in the Medical Department of the University of Nashville. Nashville, 1852: 8vo. pp. 14. (From the Author.)

The following Journals have been received in exchange :

The American Journal of the Medical Sciences; edited by ISAAC HAYS, M. D.; for July. (Quarterly. Philadelphia.)

The American Journal of Insanity; edited by the officers of the N. Y. State Lunatic Asylum; for July. (Quarterly. Utica.)

The American Journal of Pharmacy; edited by JOSEPH PARRISH, M. D., and WM. PROCTOR, M. D.; for July. (Quarterly. Philadelphia.)

The New Jersey Medical Reporter and Transactions of the New Jersey Medical Society; edited by JOSEPH PARRISH, M. D.; for July and August. (Monthly. Burlington.)

The Medical Examiner and Record of Medical Science; edited by F. G. SMITH, M. D., and JOHN B. BIDDLE, M. D.; for July and August. (Monthly. Philadelphia.)

The Charleston Medical Journal and Review; edited by D. J. CAIN, M. D., and F. P. PORCHER, M. D.; for July. (Bi-monthly. Charleston.)

The New-Orleans Medical and Surgical Journal, devoted to Medicine and the Collateral Sciences; edited by A. HESTER, M. D.; for July. (Bi-monthly. New-Orleans.)

Southern Medical and Surgical Journal; edited by L. A. DUGAS, M. D.; for July and August. (Monthly. Augusta.)

Buffalo Medical Journal and Monthly Review of Medical and Surgical Science; edited by AUSTIN FLINT, M. D.; for July and August. (Monthly. Buffalo.)

The North-Western Medical and Surgical Journal; edited by W. B. HERRICK, M. D., and H. A. JOHNSON, M. D.; for July and August. (Monthly. Chicago and Indianapolis)

Transylvania Medical Journal; edited by L. J. FRAZEE, M. D.; for July and August. (Semi-monthly. Lexington.)

The Western Lancet and Hospital Reporter; edited by L. LAWSON, M. D., and GEORGE MENDENHALL, M. D.; for July and August. (Monthly. Cincinnati.)

The New-York Medical Times; edited by J. G. ADAMS, M. D.; for July and August. (Monthly. New-York.)

The New-York Medical Gazette; edited by D. M. REESE, M. D.; for July and August. (Semi-monthly. New-York.)

The Boston Medical and Surgical Journal; edited by J. V. C. SMITH, M. D., July and August numbers received. (Weekly. Boston.)

The Western Journal of Medicine and Surgery; edited by L. P. YANDELL, M. D., and T. S. BELL, M. D.; for July and August. (Monthly. Louisville.)

The Ohio Medical and Surgical Journal; edited by RICHARD L. HOWARD, M. D.; for July. (Bi-monthly. Columbus.)

The Stethoscope and Virginia Medical Gazette; edited by P. CLAIBORNE GOOCH, M. D.; for July and August. (Monthly. Richmond, Va.)

Nashville Journal of Medicine and Surgery; edited by W. K. BOWLING, M. D., and PAUL F. EVE, M. D.; for July and August. (Bi-Monthly. Nashville, Tenn.)

The New-Orleans Monthly Medical Regis'er; edited by A. FORSTER AXSON, M. D.; for July and August. (Monthly, N. O.)

Nelson's Northern Lancet and American Journal of Medical Jurisprudence; edited by HORACE NELSON, M. D.; for July and August. (Monthly. Plattsburgh, N. Y.)

The New-Hampshire Journal of Medicine; edited by EDWARD H. PARKER, A. M., M. D.; for July and August. (Monthly. Concord, N. H.)

New-York Journal of Pharmacy; edited by BENJAMIN W. MCCREADY, M. D.; for June and July. (Monthly. New-York.)

The Western Medico-Chirurgical Journal; edited by J. F. SANFORD, M. D.; for July and August. (Monthly. Keokuk, Iowa.)

New-Yorker Medicinische Monatsschrift. Herausgegeben und Redigirt von Dr. J. HERZKA, Dr. E. KRACKOWIZER und W. ROTH in New-York; for June and July. (Monthly. New-York.)

The East Tennessee Record of Medicine and Surgery; edited by FRANK A. RAMSEY, M. D.; for July. (Quarterly. Knoxville, Tenn.)

The Journal of Psychological Medicine and Mental Pathology; edited by FORBES WINSLOW, M. D.; for July. (Quarterly. London.)

Dublin Quarterly Journal of Medical Science; edited by ———; for May. (Quarterly. Dublin, Ireland.)

Dublin Medical Press; edited by ———; for June and July. (Weekly. Dublin.)

Canada Medical Journal; edited by R. L. McDONALD, M. D., and A. H. DAVID, M. D.; for July and August. (Monthly. Montreal.)

The Upper Canada Journal of Medical, Surgical, and Physical Science; edited by ———; for July and August. (Monthly. Toronto.)

London Journal of Medicine; a Monthly Record of the Medical Sciences; edited by ———; for July and August. (Monthly. London.)

Monthly Journal of Medical Science; edited by WM. ROBERTSON, M. D.; for July and August. (Monthly. Edinburgh.)

The British and Foreign Medico-Chirurgical Review for July. (Quarterly. New-York Edition.)

The Retrospect of Medicine; edited by W. BRAITHWAITE; for June. (Half-yearly. London.)

The Half-yearly Abstract of the Medical Sciences; edited by W. H. RANKING, M. D.; for June. (Half-yearly. London and Philadelphia editions.)

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CONTENTS.—NO. II.

(NEW SERIES.)

PART I.—ORIGINAL COMMUNICATIONS.

- ART I.—Elphantiasis Arabum of the right inferior extremity, successfully treated by Ligature of the Femoral Artery. By J. M. CARNOCHAN, M. D., Professor of the Principles and Operations of Surgery in the New-York Medical College, Surgeon to the State Emigrants' Hospital, Ophthalmic Surgeon to the same Institution, &c., &c. [With a plate], 161
- ART. II.—On Epidemic Typhus or Typhoid Fever as it appeared at and in the vicinity of Borodino, New-York, in the years 1849, '50, and '51. By DR. JONATHAN KNEELAND, - - - - - 169
- ART. III.—Statistics of the Operation of Amputation at the Hip-Joint. By STEPHEN SMITH, M. D., - - - - 184
- ART. IV.—Case of Carcinoma of the Eyelid—Blepharoplastic Operation after Dieffenbach's Method. By C. THEODOR MEIER, M. D., of New-York, - - - - 205
- ART. V.—Case of Dissection Wound, followed by great Constitutional Disturbance, and Death on the eighth day. By W. D. PURPLE, M. D., of Greene, New-York, - - - - 209

- ART. VI.—Upon Acute Gastritis, with Cases. By JOHN A. LIDELL,
M. D., of New-York, - - - - - 211
- ART. VII.—Memoir on Nicotine, by M. ORFILA. Translated
from the French, by CHARLES A. LEE, M. D., with notes, - 219

PART II.—CRITICAL ANALYSIS.

- ART. VIII.—Report on the Mortality of Cholera in England,
1848-49. London, 1852: Printed by W. Clowes and
Sons, for Her Majesty's Stationery Office. Royal 8vo.,
pp. 474, - - - - - 244
- ART. IX.—Lectures on the Principles and Practice of Surgery.
By BRANSBY B. COOPER, F. R. S., Senior Surgeon to
Guy's Hospital, etc., etc. Philadelphia: Blanchard and
Lea. 8vo. pp. 771 - - - - -
- The Principles and Practice of Surgery. Illustrated by three
hundred and sixteen engravings, on wood. By WILLIAM
PIRRIE, F. R. S. E., Regius Professor of Surgery in the
Marischall College and University of Aberdeen, etc., etc.
Edited, with additions, by JOHN NEILL, M. D., Surgeon to
the Penn. Hospital, etc., etc. Philadelphia: Blanchard
and Lea. 1852. 8vo. pp. 784, - - - - - 250
- ART. X.—On the Surgical Treatment of Polypi of the Larynx
and Œdema of the Glottis. By HORACE GREEN, A. M.,
M. D., President of the Faculty, and Professor of the
Theory and Practice of Medicine, in the New-York Medi-
cal College, Member of the American Medical Association,
etc., etc. New-York: G. P. Putnam. 1852. 8vo. pp. 124, 253

PART III.—FOREIGN AND MEDICAL RETROSPECT.

PATHOLOGY AND PRACTICAL MEDICINE.

- Differential Diagnosis of Aneurisms of the Arteria Innominata,
and Arch of the Aorta, - - - - - 254

On the Use of Manganese as an adjuvant to Iron, - - -	255
Preparations of Manganese and Iron, - - - - -	257
On Eczema Impetiginodes in Children, - - - - -	258

SURGERY.

Cases of Recovery after Fracture of the Base of the Skull, -	259
Iodine Injections in Ascite, - - - - -	260

MIDWIFERY AND DISEASES OF FEMALES.

On Abdominal Tumors during Pregnancy, - - -	260
On a new mode of operating for Ovarian Dropsy, - - -	261
On the Diseases of the Follicles of the Vulva, - - -	263
Conclusions derived from an Analysis of one hundred cases of Cancerous Disease of the Uterus, - - - - -	266
On Sudden Death after Delivery, - - - - -	267

THERAPEUTICS.

On the Therapeutic Properties of Arnica Montana, - - -	268
--	-----

OBITUARY.

Death of John Dalrymple, Esq., - - - - -	272
Death of Prof. William Thompson, M. D., - - - - -	272
Death of John P. Vincent, Esq., F. R. C. S., - - - - -	272
Death of Prof. Recamier, - - - - -	272

PART IV.—COMMUNICATIONS AND AMERICAN MEDICAL RETROSPECT.

COMMUNICATION.

Case of a Child injured by Lightning. Remarks on "Coup de Soliel," - - - - -	273
---	-----

PATHOLGY AND PRACTICAL MEDICINE.

Two Cases of Sudden Death during Anæsthesia, - - -	275
Dr. Haynes' Case, - - - - -	277

On Painful Tubercle, with a Report of two Cases, with dissection, which tend to show that the affection is not Neuroma or enlargement of the Nervous Tissue, - - -	278
Remarkable Case of Precocity—Menstruation established at four years of age, - - -	280
On the Diseases and Climate of California, - - -	280
On the Pathology of Saccharine Diabetes, - - -	287

SURGERY AND SURGICAL PATHOLOGY.

On the Effects of Anæsthetic Agents in Operations for Gun-shot Wounds, - - -	288
Strangulation from Enlarged Tonsils—Laryngotomy, - -	290
On the Radical Cure of Reducible Hernia, by Injection, -	290
Report of Twenty-five Cases of Urinary Calculus, in Twenty-three of which the bi-lateral operation was performed, -	292

MISCELLANEA.

The Mineral Acids in Cholera, - - -	293
Efficacy of full doses of Quinine in Comatose pernicious Intermittent fevers, - - -	294
Proceedings of the New-York State Medical Society, - -	294
Editorial and Professional Changes, - - -	296
Philadelphia Medical and Surgical Journal, - - -	298
Brooklyn City Hospital, - - -	298
Obituary, - - -	298

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OF CARNOCHAN'S CASE OF ELEPHANTIASIS ARABUM.
TREATED BY LIGATURE OF THE FEMORAL ARTERY.



THE NEW-YORK JOURNAL OF MEDICINE

FOR SEPTEMBER, 1852.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I.—*Elephantiasis Arabum of the right inferior extremity, successfully treated by Ligature of the Femoral Artery.* By J. M. CARNOCHAN, M. D., Professor of the Principles and Operations of Surgery in the New-York Medical College, Surgeon to the State Emigrants' Hospital, Ophthalmic Surgeon to the same Institution, &c., &c. [With a plate.]

Elephantiasis Arabum, so called in contradistinction to *Elephantiasis Græcorum*, because its history was first described by Arabian authors, is a malady, the etiology and pathology of which are not definitively understood at the present day. The treatment also remains uncertain; and when the disease has existed for any length of time, it is generally looked upon as irremediable by any other means than amputation of the tissues, or of the member involved. This malady is not confined in its attacks to any particular part of the body; the vulva, the scrotum, and the inferior extremities are, however, the principal seats of the disease. When affecting the lower extremity, its peculiar form, which is somewhat like the clumsy

appearance of the elephant's leg, suggested the name of Elephantiasis.

Elephantiasis of the Arabs is said to be uncommon in Europe, and as respects this country, I am not aware of its occurrence endemically, in any part of it. Insulated cases, however, certainly do present themselves. Within the last three years, five marked cases have come under my observation; of these, in two instances, the malady showed itself in the scrotum, and, in the other three, the seat of the disease was in the inferior extremity. Four of these cases became developed in persons residing in different parts of the United States, one in New-York, one in Florida, one in Virginia, and one in the State of Pennsylvania; the other case occurred in a patient who was a native of Ireland, and who imported the disease with him. These patients were all adult males, and the circumstances preceding the development of the disease in each case, were generally dissimilar; thus, in the cases where the inferior extremity was affected, the disease in one became manifested after an attack of paludal fever; in another also, after a febrile attack; and in the third, after the individual had been working for some time at an occupation requiring him to stand for hours with his legs immersed in water. In one of the two cases where the scrotum and integuments of the penis were affected, the elephantiasis was preceded by a scrotal hernia, and by an attack of syphilis, while the other was associated with, and preceded by, a large hydrocele of the tunica vaginalis testis.

Climate cannot be said to have exerted any influence, as the cases occurred in different localities. The accounts, however, related of this malady, will not allow us to doubt that it is met with in certain latitudes and localities, more frequently than in others. In the West Indies, some parts of Asia, and among the Arabs, it is found to exist endemically; but, although this fact is established, and points to the influence of climate, what that influence is, and how it operates, remains unaccounted for, with any degree of certainty. The enlargement of the thyroid gland, which occurs in certain parts of Europe and North America, is ascribed to the drinking of snow water, and of water impregnated with calcareous or earthy particles; while in the equatorial or tropical regions, the prevalence of elephantiasis is

attributed to the alternations of heat and cold. But these speculations, resting as they do upon no positive data, are extremely vague, and thus, both as regards the more frequent occurrence in certain localities, and as regards the difficulty of accounting for the influence of climate, elephantiasis and bronchocele, both hypertrophic conditions of the tissues, appear to have some analogy to each other.

The production of the disease has also been attributed to the obliteration of the veins of the member affected, and likewise to chronic inflammation, commencing at the dermoid structure, and extending, by contiguity of tissue, to the subcutaneous layers; but again, it must be remarked, that no fixed invariableness of antecedence has been observed. One fact which may have some bearing upon the etiology of elephantiasis, and to which I shall again presently allude, has been generally overlooked. I refer to the morbid condition and dilatation of the principal arterial trunk of the member affected. The disease has also been supposed to arise from frequent attacks of erysipelas; and as another cause, from sub-inflammation of the absorbent vessels and lymphatic glands.

Elephantiasis, as in two of the cases which came under my observation, is sometimes rapid in its accession or invasion, and, when occupying an extensive surface, the constitution participates in the local affection. The skin assumes an erysipelatous hue; the subcutaneous tissues become engorged, tumified, and tense; the course of the lymphatics, if the seat of the malady be on a limb, is marked by nodulated cords; and the glands of the groin or of the axilla may also become affected and enlarged; these various symptoms being ushered in by a deep-seated and violent pain in the region of the disease.

If the disease, after the acute stage, do not recede, the intumescence remains, although the other symptoms may subside for a time. Exacerbations recur at intervals varying in duration, and the enlargement of the tissues increases, until the structures invaded remain, as it were, stationary in their abnormal condition, imparting to the hand, when examined, a harsh, dense, pachydermatous sensation, and presenting to the

eye, in the most characteristic form of the disease, a rough, scaly, dusky-looking mass of deformity, well represented in the accompanying illustration.

If the disease progress no farther than has just been described, the enlargement of a limb, or of the scrotum, remains an insufferable encumbrance; while, in the uninterrupted progress of the disease, fœtid and incurable ulcerations may occur, abscesses may take place among the morbid tissues, and the internal organs may become deranged. The prognosis, consequently, must be unfavorable, when the disease has existed for some time, and assumed its characteristic, chronic and intractable form.

In the early stages of the disease, it is possible that it may be confounded, especially in females, in whom the subcutaneous strata are usually thicker than in males, with diffuse and deep-seated inflammation of the cellular tissue, or with œdema or anasarca. The history and progress of the disease, the sensation imparted, upon examination, by the tumor, and the peculiar local traits, generally suffice to enable the practitioner to discriminate, without much difficulty, between elephantiasis and the other diseases just named.

It would appear from the different accounts given of this disease, that the whole of the tissues of a member may become ultimately implicated. Some are primarily affected, while others, such as the bones, are probably not involved in the morbid degeneration, until the disease has been of long standing. The tissues primarily affected would seem to be the vascular; and the pain, redness, and hardness met with in the first stage of the disease, in the course of the lymphatic vessels, together with the appearances of the veins, upon autopsy, as mentioned by Bouillaud and others, evince with sufficient certainty a pathologic condition of the vessels. The arteries also participate in the disease, and very probably at an early stage of its invasion.

The skin generally shows early participation in the malady; most commonly the development of the initiatory stage is accompanied by some form of cutaneous affection, such as eczema, erysipelas, lichen, or ulceration. These affections occur, however, so frequently without any of the hard and bulky

intumescence characteristic of elephantiasis being manifested as a sequent, that it is reasonable to suppose they are accompaniments merely of disease of the deeper-seated tissues, especially of the vascular tissues upon which, in reality, the elephantiasis depends. The different strata of the skin are hypertrophied to a considerable degree, the epidermis presenting a series of dusky, hard, superimposed scales. This condition of the epidermis, however, is not always present, especially when the scrotum is the seat of the disease. The subcutaneous adipo-cellular layer is blended with the dermoid tissue, so as to form a hard, dense, and lardaceous mass of irregular thickness; the subaponeurotic and intermuscular cellular tissue becomes also changed and hypertrophied; the muscles, also, are in the progress of the disease perverted, becoming softened and less deeply colored than in their normal condition, sometimes being converted into fatty tissue, at others into an indurated formation, and even, at times, exhibiting deposits of bony material; the nerves are sometimes found to be increased in size; the bones are sometimes found unaltered, and sometimes are found increased in size; and, lastly, the interosseous ligament is at times found ossified. Lesions of the internal organs are not so frequently found to accompany elephantiasis Arabum as the other form, known as elephantiasis Græcorum; still, diseases of the internal viscera are seen as complications of the former, when the malady has existed for a long period.

In its initiatory stage, the treatment of elephantiasis, regarded as a *phlegmasia*, should be conducted upon antiphlogistic principles; thus bleeding, emollient applications, tepid baths, and the vapor *douche*, are recommended and resorted to. In the more chronic stages of the malady, compression, combined with scarifications and local bleeding, are said to be useful. Iodine frictions and the vapor *douche* appear to merit most attention, having, upon good authority, been used advantageously in cases of genuine elephantiasis.

When the disease has resisted every rational curative method, and when the part attacked has attained a size which, by reason of the weight of the mass, renders it an unmanageable encumbrance, as happens in elephantiasis of the scrotum and of the inferior extremities, amputation is advised and

practised as the only alternative. But this extreme resort is not usually attended with success, the disease generally returning upon some other member with all its original inveteracy and obstinacy.

In the following case which came under my management, I resorted to a method of treatment which, as far as I know, is entirely novel, and which, both for this reason and because it terminated in the perfect restoration of the diseased and cumbrous limb to its normal condition and functions, I have thought deserving of publicity.

The annexed drawing of the limb of the patient, taken from nature, gives an accurate representation of the disease.

CASE.—Charles Roller, of lymphatic temperament, and short stature, æt. 27, born in Aix-la-Chapelle—occupation, merchant, left his home in December, 1849, landed in New-York in February 1851, went thence to Connecticut, where for eight months he worked in a factory, standing during his hours of labor; thence went to Virginia, where he worked on a farm for about six months, at the expiration of which period he was taken with fever, of an intermittent character. Up to that time, he had always been in good health.

During the fever, the inguinal glands became swollen and painful; the swelling and pain extending in the course of the femoral vessels as far as the knee. The pain was followed by swelling and redness of the thigh down to the knee. From the knee, the pain and swelling continued to extend downwards as far as the toes; being, at this time confined chiefly to the portions of the limb along the course of the saphena vein, and also of the posterior tibial vessels. The redness and tumefaction here, as in the thigh, was preceded by deep-seated pain. The tumefaction of the limb continued to increase; while, at the same time, febrile exacerbations occurred at intervals, varying from two to six days. After a period of about six weeks from the commencement of the disease, the fever entirely disappeared, and by this time, also, the pain and redness had entirely ceased; the limb, however, remaining hard, swollen and rough, and presenting, in a marked degree, the peculiar characteristics of elephantiasis Arabum, in the chronic period of the disease.

From this time forward, the hardness and intumescence gradually increased, and the limb became so cumbersome, that the patient was obliged to give up all business, and confine himself chiefly to a recumbent posture. In this condition, the patient left Virginia for the purpose of seeking medical relief at the New-York Emigrants' Hospital, into which he was admitted the fifteenth of January, 1851. The appearance of the patient upon entering the Hospital was somewhat emaciated. He had no febrile symptoms, and the chief difficulty, under which he labored, arose from the enlarged and hypertrophied condition of the right inferior extremity.

The limb was enlarged from the toes to within a short distance below Poupart's ligament. The thigh, although enlarged, was not much indurated; while, from a short distance above the patella, downwards, the limb presented a dense, hypertrophied, hard, scaly, shapeless mass, the appearance of which will be best apprehended by referring to the accompanying plate.

The morbid condition of the tissues pervaded the foot and toes, there presenting groups of tuberculated growths. The circumference of the limb around the ankle, was nearly as large as that of the calf; measuring fifteen and one-half inches, while the circumference of the calf measured nineteen and one half inches.

The patient was put under treatment upon entering the Hospital. The recumbent posture was enjoined, and for some time various discutient lotions were used. Bandaging was resorted to, with frictions of ung. Potass. Iodid; the Iodide of Potassium being also prescribed internally.

At times, also, the limb was painted with strong tincture of Iodine; local and general baths were used, regular bandaging of the limb, from the toes upward, being the while carefully observed.

This plan of treatment was perseveringly adhered to from the fifteenth of January to the twenty-second of March, a period of a little over two months, without any amelioration. Having thus tried, without success, the method of treatment most approved of, I proposed to place a ligature upon the femoral artery, with a view of changing the morbid condition of the

structures supplied by the branches of this arterial trunk. A consultation was held, and my proposition was acceded to as preferable to amputation, the usual alternative resorted to in this stage and extent of the disease. Accordingly, on the twenty-second of March 1851, I secured the femoral artery, a short distance below the origin of the *arteria profunda*. Upon exposing the femoral artery, this arterial tube was found to be changed, so as to present an appearance somewhat like the color of the aorta of the ox, and to be larger than the common iliac of the human subject. In consequence of this appearance of the artery, after some hesitation, I applied the ligature, preferring to do this, rather than to expose the external iliac, of the soundness of which I could not be certain.

The ligature came away from the femoral artery on the eleventh day, accompanied by secondary hemorrhage, the occurrence of which I had expected as probable. For the purpose of arresting the hemorrhage, the *external* iliac artery was secured by ligature, by Dr. A. E. Hosack, who happened to be on duty at the time in the Hospital. The external iliac was found to be about the size of the brachial artery. This, for a time, apparently had some influence upon the hemorrhage; but on the following day, bleeding was again renewed from the orifice, in the femoral artery, with as much profusion as ever.

The hemorrhage was now restrained by the prompt application of a tourniquet, on the *cardiac* side of the bleeding orifice, by the house surgeons, Drs. Thompson and A. K. Smith.

This even failed to stop permanently the hemorrhage, and the blood recommenced oozing copiously at intervals. The patient was now sinking fast, and the ligature of the common iliac, or amputation at the hip-joint, appeared to be the only resources left. But the hemorrhage now being evidently reflux, it was suggested to apply the tourniquet, so as to produce compression on the *distal* side of the bleeding orifice: this was done, and was followed by a complete cessation of the bleeding.

From this time, (April fourth, 1851), the house surgeon kept an instructive record of the case, which record I have now before me. For several days, the pulse ranged from 115 to 108: the dressings were carefully attended to, and light diet prescribed. On the twelfth, the leg was found to be con-

siderably reduced in size, and the ligature of the external iliac, came away. On the seventeenth, brandy and quinine, with good nourishment, were ordered. On May the first, finding the leg still more reduced and the lower wound healed, I ordered tincture of iodine to be painted on the leg, and the bandage to be continued; I also ordered a solution of chloride of soda to be used as a wash on the upper wound, which continued to discharge freely.

The patient now went on gradually improving in strength and appearance, and left the Hospital in the latter part of June, completely cured of his malady. At this date, sixteen months after the ligature of the femoral artery, the patient is in robust health, and presents no indications that the disease will return.

ART. II.—*On Epidemic Typhus or Typhoid Fever as it appeared at and in the vicinity of Borodino, New-York, in the years 1849, '50, and '51.* By JONATHAN KNEELAND, M. D.

THE nature and essence of the actual producing cause of typhus or typhoid fevers I shall not attempt to describe. Nor shall I here discuss the question, whether these are *distinct* diseases, or only *varieties* of the same disease. But I shall state facts which have, for the most part, occurred in my own practice during the prevalence of this form or these forms of fever, within a circuit of nine miles, during the last three years. It may seem that city physicians engaged in a large practice, professors in our metropolitan medical schools, and hospital physicians, possess facilities for noting and accurately observing fever facts, not within the reach of the secluded country practitioners, and that to them, therefore, pertains the right, and upon them devolves the duty, of collecting and classifying our facts, and deducing therefrom opinions to guide our practice. But does not our very seclusion, and the fixed unvarying character of our population, furnish us facilities to note accurately the rise, progress, and termination of a disease, from the first individual attacked to the very last case of the kind which occurs in a given locality and season, not possibly within the reach of hospital or city practitioners?

In November, 1848, a young man aged twenty, residing in Borodino, a small country village in the southern part of the county of Onondaga, was seized with fever three weeks after his return from Fulton, Oswego county. He stated "that he staid over one night in a house where one person had shortly previous died of fever, and others had been and then were sick with the disease; and that it was not called the common fever (malarious or bilious) of that locality." He was moderately seized, and the disease progressed slowly, but without marked cerebral or abdominal symptoms, to a favorable convalescence, at the end of the fourth week from the time of the attack. In four weeks from his seizure, his father, mother, brother, sister, his attending physician, and a young man who boarded with them, every member of the family, were seized within twenty-four hours of each other, most of them on the same day.

I saw at different times during their illness, six of these cases, and from their attending physician learned still more than from personal observation. The cerebral disturbance, as evinced by night delirium, dulness of countenance, came on during the second or at the beginning of the third week, in most of them, more early in a few. Diarrhœa of yellow liquid stools obtained in most of them, but was under the control of remedies, and no hemorrhage occurred from bowels or elsewhere. Two deaths, which took place in the fourth week, were preceded by delirium, subsultus tendinum, sleeplessness, deafness, and coma. In one of the fatal cases, examination showed no marks of diseased action in the brain. The small intestine was red and thickened in patches, and the spleen enlarged to two or three times its normal size, and softened. No cases of fever originated from any of the eight cases, and there have been no cases of fever in the village since, more than three years.

Nearly simultaneous with the above cases occurred the following, similar in symptoms and nature, although of different origin.

On the 22d December, 1848, Mrs. A——, a married lady aged about twenty-eight years, was seized with chilliness, pain through the forehead and *eyeballs*, and in the back, and back of the neck, followed on the 23d by moderate reac-

tion, a slightly coated tongue, and some abdominal pain. As neither she nor her family had intercourse with the cases in Borodino, and lived more than two miles distant, I hesitated as to the nature and origin of the disease; but learned on inquiry that on the 24th and 25th of November, four weeks previous to her present attack, she had spent thirty-six hours with her sister, a Miss Wilson, who, during that time died with fever; and that three persons in the neighborhood of Miss W. had died of a disease called by the attending physician typhus fever; and that her sister had taken care of and nursed in the family where these deaths had a short time previously occurred. Mrs. A—— came home, a distance of twenty-six miles, and enjoyed good health during the four weeks which elapsed prior to her attack. The fever seemed nearly stationary, and no untoward symptoms arose until the fifteenth day, when cerebral symptoms, insomnia, tremors, volubility, and finally active delirium, made the case troublesome for ten days, followed by loss of memory and judgment; and during the next ten days she seemed like a child of two years old just beginning to talk and understand. At the end of five weeks convalescence was fairly established.

A young lady, aged twenty-one years, who attended Mrs. A. during the most severe part of her illness, was, on the 28th of January, 1849, four weeks from the time she entered the house, seized with fever, which progressed similarly, but with no *active* cerebral symptoms, to convalescence, which was not fully established before the end of the fifth week from the period of attack. No member of either family took the fever from these cases.

On the 1st of October, 1849, Mr. A—— W——, aged 38, of Navarino, a small village eight miles remote from the nearest of the above-mentioned cases, and who had had no intercourse or connection with any person or family infested with fever during the previous winter, was attacked with what proved to be fever of a typhoid character. Within two weeks his wife came down with the same fever. The disease displayed the characteristic features of cerebral disturbance, marked by confusion and dulness of the mind, night delirium, increase of severity during the second fourteen days, and

tedious convalescence, with mild abdominal symptoms, which marked that of the previous winter.

About the 15th of November, W.'s sister, living nine miles from him in one direction, his mother and sister four miles in another, and a sister and brother-in-law seven miles in a third direction, all within four days of each other, were seized with fever of a similar character, and had all been with him to watch and aid in nursing during the week, when his disease was at its acme, and came down with the disease in from three and a half to four weeks from that time. From them, and in two of the families where they were sick, five more cases originated, being seized in from three to five weeks afterwards.

A young man, living four miles distant, who went to A. W.'s (the first case mentioned above), to board and attend school, on the 10th of November, being after convalescence was fairly established in A. W.'s case, and had commenced in Mrs. W.'s case, was attacked with fever of a mild form, between the 25th and the 29th days after entering the family. He however kept about for nearly a week, then came home; soon became delirious; tongue red and dry; bowels tympanitic and painful. An *uncontrollable diarrhœa** came on, of dirty yellow watery stools; and he died at near the close of the fourth week from the time of attack. Two young men, one twenty and the other twelve years of age, who went from another neighborhood to labor for W., and were only in the house at meal time, and during one night, took the fever, and were moderately sick about the same length of time which the more severe cases lasted. To conclude the history of the fever as it appeared in the autumn of 1849, and the winter of

* By *uncontrollable diarrhœa* I mean here and subsequently, when using the term, that the lower bowels could not be calmed, the sphincter ani induced to contract, and peristaltic action prevented with any degree of certainty, or for any considerable length of time, by tannin and opium, acetas plumbi and opium, catechu and geranium given by the mouth, conjoined with enemata of starch and laudanum. In all cases in which these or other reliable means enabled us to control the bowels and prevent involuntary discharges (which in the fatal cases were often present), the term is not applied.

1850, there were nine cases in the immediate vicinity of Mr. W., all clearly traceable to his case, or that of his wife, as the *fons et origo mali*. In about twenty cases there were but three deaths; and one of those, it is generally thought, was caused by the injudicious and wholly mistaken notion, that the fever could *be broken up*, in its early stages, by lobelia emetics. It was currently reported that the patient died under the operation of an emetic, in the early stage of a mild attack of the disease. In another, the case mentioned above, the bowel lesion, which finally proved fatal, was probably much aggravated by his having swallowed several drastic hydragogue pills, which he had obtained *to break up the fever*.

In summing up the symptoms which marked these two distinct epidemics as briefly as possible; and at the same time so definitely as to aid the medical reader in arriving at correct conclusions as to their specific character, I will state that many of them were under my immediate care and inspection throughout the disease; and of the remainder, which were treated by neighboring practitioners, I saw a number of the more grave cases, at different times during their sickness, and therefore speak from personal knowledge. Chills or chilliness, followed or attended by headache and pains "all over," these pains diminishing, and generally ceasing within a week; thirst, heat of surface, pulse accelerated, and fever increasing at night; appetite and strength gone; dulness of mind; delirium at night, or on first waking, and the delirium increasing at or about the 15th day in many cases; jactitation; sleeplessness, or dozing subsultus; picking and reaching after unrealities; epistaxis in nearly half of the cases, some time in the second week; a dry, red, glossy, or slimy tongue, becoming dark and cracked in the course of the third week, in some cases, with sordes on the teeth; *deafness* in nearly half the cases, in some cases preceded for a few days by marked acuteness of hearing. Diarrhœa, of thin, dark, dirty, or ochery stools, in more than one-fifth of the cases, not easily controlled;—in those cases unaccompanied by diarrhœa the bowels easily moved by laxatives or enemata, tympanitic distension of, or tightness of the integuments over the abdomen, with gurgling on pressure

in the right iliac region. Bronchial or sibilant rales over the chest, in a few cases, which were casually observed during the second or third week; red, oval spots, scattered over the upper part of the abdomen, about the 12th to 15th day after the attack. Convalescence never occurred before the third, and often not until the fourth or fifth week after the onset of the disease; and death, in the fatal cases, was postponed to nearly the close of the fourth or into the 5th week. Such were the characteristic features of the disease, not all present in every case; but a majority, or a large moiety of them, were never entirely absent in any of the cases which occurred during either the epidemic or outbreak of 1848 and '49, or that of 1849-50.

In December, 1850, G. M.—, a young man twenty-three years old, was attacked with fever, about three weeks after his return home from Michigan, where, in making a wedding-tour, he had spent some five weeks. He was not aware of having been exposed to fever, either in Michigan, or during his journey. The premonitory symptoms, as chilliness, headache, pain in the back and limbs, with fever at night, and diarrhœa, were not sufficient to keep him from work, and he drew wood five miles to market seven days after his appetite was gone, and the above symptoms were manifest. I was not called until the 10th day after he was seized with chilliness. Instead of "a hard cold," as he thought, his inexpressive look, red, glazed tongue, tympanitic abdomen, with gurgling or pressure over the right iliac region, *dark*, yellow, watery stools, and pungent heat of surface, told but too plainly that the frost of the two previous winters had again made its appearance. Neither the patient nor his family had been exposed to contact or intercourse with any of the families who suffered from fever during the two previous winters; they lived one mile and a half distant from the nearest case. His case may be stated as a fair sample of the more grave cases, which commenced with, and spread from him, as a starting point of contagion. Indifference to his own condition, somnolency and deafness slowly increased from the 10th to the 17th day, when the common answer to the inquiry, "How do you feel now?" would be, "well enough," or "good," or "first-rate;" at the same time,

the dusky hue of his countenance, which, just observable at first, increased, and gave to his cheeks, nose, and the lower part of his forehead, the appearance of having been burnt before a hot fire, only the color was darker. His knuckles, elbows, and nates, where the capillary circulation is feeble, manifested the same discoloration; while the parts so marked felt cold, the body gave out a pungent heat; his tongue became moist and slimy on the 15th day, and was covered with tenacious mucus until the last three days, when sordes appeared on lips, teeth, and tongue; his pulse was about 90 per minute in the morning, 110 at night, and soft until the last twenty-four hours, when it became *small, quick, sharp, and very rapid*. Suppression of urine came on upon the 18th day, and as he had had no previous strangury, urine of natural appearance had been freely voided throughout his illness; the brain, or its media of communication with the detrusor urinæ, must have been at fault. The catheter passed readily, and was used two or three times every twenty-four hours, up to the twenty-sixth day, when he died; his symptoms changing only in a gradual increase of deafness, increased sensibility of the skin, lividity of the face and other parts, becoming more dusky in hue, appearing sometimes on one side of the face, and again on the other, and then partially disappearing. On the twenty-fifth day, hemorrhage from the bowels occurred; consisting of copious stools of uncoagulable blood, mixed with dark fæcal matter, of a highly offensive cadaverous odor; the evacuations briny, preceded by paroxysms of abdominal anguish, with efforts to rise, and thrusting of the clenched fists into the abdomen; bronchial rales were heard over the chest, with an occasional hacking cough throughout the first fifteen days; but as the abdominal symptoms became more urgent, the cough for the most part disappeared. After the twenty-first day the heat of the surface kept below the standard of health. For twenty-four hours before hemorrhage occurred, he had the dicrotus or hemorrhagic pulse; and I observed this symptom also in two subsequent cases, fatal from hemorrhage, and in one case where hemorrhage from the womb occurred, but the patient recovered. I saw no petechial eruption on him at any time. Four days after his death, his

wife was seized with dizziness and fainting, followed by violent pain in head, back, and back of neck. I saw her four hours after seizure; found her eyes red, face turgid, pulse bounding, in short all the symptoms of high febrile excitement, dulness and confusion of mind, intolerance of light and noise. Her fever manifested for the first fourteen days marked remissions towards morning, with evening exacerbations of high excitement, attended with delirium, sleeplessness, and efforts to escape. On the fifteenth day she had the bisferiens, or dicrotus pulse, followed on the sixteenth by uterine hemorrhage; during the continuance of which an embryo (of six or seven weeks perhaps) was cast off. On the eighteenth, her febrile symptoms moderated, and towards the morning of the 19th, a gentle moisture appeared over the entire surface. Her mental faculties and speech seemed weakened, and about equal in power and distinctness to those of a child of three years of age, but slowly returned as the fever grew less, and appetite and strength returned. By the twenty-seventh day, she was free from fever, and fairly convalescent.

On the twenty-fourth of January, 1851, Mrs. M——, aged twenty-eight, a near neighbor of G. M., who had watched with him and often been in the house during his illness, was attacked with fever; she had no medical attendant during the first week, at the end of which time I found her with the characteristic symptoms of a low grade of the disease; feeling quite well each morning; headache, sleeplessness and fever at night. But neither in her case, nor Mrs. M——'s, mentioned above, was there much diarrhœa, the bowels being easily moved, and the stools like rhubarb and water, or yellow and ochery, with gurgling on pressure, and abdominal fulness, but not tympanitic. She grew worse after the fifteenth day, slight diarrhœa and severe cough came on; the cough continued until convalescence was fairly established, at the end of the sixth week; apathy and indifference to her condition were marked symptoms during the last two weeks, but there was no delirium; subsultus and tremor of the voice, with almost complete prostration of strength, attended through the third and part of the fourth weeks.

Mrs. M——'s brother-in-law, aged twenty, who had

watched with G. M. the first case, was seized within three weeks from G. M.'s death, and four weeks from the time he watched, in an adjoining county some thirty miles distant; he came home, was moderately sick for eleven days, epistaxis then occurred, and was so very profuse, as to excite our alarm, after which he lay somnolent and indifferent for three weeks, and then slowly convalesced. G. M.'s mother aged sixty-four took the fever, and died in just four weeks from his decease, an old bronchitis having been fatally accelerated by the fever.

Mrs. B——, an old lady, aged seventy-two, who took care of old Mrs. M., and who (it was said) slept in the room, and in the bed where G. M. died; came down with the fever in twenty-four days after entering the house; lived twenty-nine days. An *uncontrollable diarrhœa* became a prominent symptom, the evacuations were at first of a dirty yellow color, afterwards darker, and finally of a dirty reddish brown color. Mrs. B.'s daughter, L. S., aged thirty-six, who nursed her mother almost solely, during her illness, was seized with fever, in just ten days after her mother's death, and died on the twenty-eighth day. E. P., a grandchild of Mrs. B., aged ten years, was seized four days before her aunt's death, and twenty-five days after her grandmother's death, and lived but four weeks. Diarrhœa and cough were prominent symptoms during the second fortnight in both these cases.

The mental apathy, so characteristic of grave cases, was present after the first week in these three cases in a marked degree, and in two of them deafness, amounting to almost total deprivation of that sense, towards the close of life; while the sense of touch, as evinced in the increased sensibility of the face, lips, and skin, was morbidly augmented. Oval red spots, large and few in number, appeared about the fifteenth day over the stomach in the case of L. S. J—— P——, the father of the child, was seized four days later than his daughter with *symptoms of fever*, accompanied by pleuro-pneumonia, urgent dyspnœa and copious expectoration of bloody froth; he was bled copiously, and rapidly brought under the influence of mercury; and after ten days, rapidly convalesced without cerebral symptoms.

It is worthy of remark, that this family lived in an old

house, built forty years ago of logs, where the filth of near half a century, in a state of decomposition, had filtered through the cracks of the loose floor, and converted into mud, had mingled with the surface water, which oozed up at every step; and lacked the necessities of life: all the other cases in the two previous, and in the epidemic which I am now describing, having occurred in the abodes of comfort and plenty.

But let us return to the family mansion of G. M. where the fever first occurred; and trace it from one individual to another, until the question of its communicability, or contagiousness, shall be definitely settled in the light of facts. S. W., a servant girl in the house where Mrs. M. the wife of G. M. was sick, took the fever in three weeks after washing the bedding and linen of the sick woman, had moderate typhoid symptoms lasting four weeks.

W——P——, aged thirty-six, who nursed G. M. for ten days before his death, went to a neighboring town to work; and in three weeks after M.'s death, and about four weeks from the time he entered the house, was seized with fever of a low grade; and continued moderately sick until the commencement of the fourth week, when most profuse exhausting sweats came on, after which he slowly recovered. This man nursed throughout the two previous epidemics and escaped fever. Three weeks after G. M.'s death, his father, aged about seventy-two, was seized with fever, attended throughout with symptoms of unusual leniency; still the red tongue, diarrhœa with ochery stools, and tedious convalescence, left no doubt as to its nature.

In the house occupied by H. M. before described, about thirty rods distant from G. M.'s, there occurred between the twenty-fourth of January and the tenth of May, nine cases of fever, and three deaths, at intervals of from three to five weeks, except in three cases which were nearly simultaneous in their outbreak, and the first two cases above noticed, which were doubtless contracted during the last week of G. M.'s illness. Their respective ages were: twenty-eight, twenty, thirty-two, fifteen, seventy-two, seventy-five, sixty-three, seventy-five and twenty-four.

Of those who died, one aged seventy-five died on the thirty-sixth day, of ulceration of the colon, with perforation. She was

slowly convalescing; death took place suddenly. Another, aged thirty-two, died on the nineteenth day, of hemorrhage from bowels, without pain; a third died on the eighteenth day; ileum found extensively ulcerated, and more than one-half of the lungs, at their lower and back part, carnified, of a bluish red color; blood liquid; back, and lower side of the limbs, of a cadaverous purple, being filled with dissolved blood.

In one case only in this family, did I discover petechiæ, few in number, and small on the upper part of the abdomen, and during the third week, in the patient aged fifteen years. In seven of the nine fatal cases the livid, dusky discoloration of the cheeks, nose, ears, knuckles, &c., mentioned in describing G. M.'s case, were manifested about the fifteenth day or a few days later, and continued to appear, and partially (never wholly) disappear; sometimes being on one cheek, and the same ear, and side of the nose, and again fading there, and appearing on the other side. In no case where this appearance occurred about the fifteenth, and continued beyond the twenty-second day, did recovery take place. Another fact; the *mild* cases of the first fortnight oftener proved fatal at or before the end of the second fortnight, than those which were more severe at first. The young man aged twenty-four, in whom a post-mortem examination revealed terrible and extensive ulceration of the solitary, and agminate glands of the ileum, walked to consult me more than a mile, three days after his attack; and only complained of general languor, diarrhœa, and a *bad* feeling in his bowels, nor did he seem, to a casual observer, very sick until the twelfth day.

If the reader has had the patience to follow me thus far in my digressive and disjointed narration of facts, he will, I am confident, adopt one conclusion, at which I arrived during their occurrence, viz., that the disease we have had in this locality during the three past winters *was contagious*, and was in no case *caused* by filth, impure air, short rations, watching, severe toil, and mental depressing agencies; and surely I freely admit that these agencies may, and probably do, either singly or combined, increase the ratio of mortality in persons who have received the contagious influence; they may and doubtless do by their presence lower the vital energies to a succumb-

ing point, in persons having the contagious cause within their organism, and by their absence afford immunity to those who, after exposure, go about cheerful duties in pure uncontaminated air away from the sick-room.

But, says the objector to the contagious origin of these fevers, "Why do so many who are exposed escape?" As well might death or damage, by *coup de soleil*, be denied in *any* case, because *all* upon whom the hot sun shines are not affected by sun-stroke; as well may it be denied that death-dealing bullets flew at Buena Vista, because many soldiers escaped harm on that field of blood. Allow me to direct the reader's attention to the case of N—— M——, aged 20, and that of W—— T—— aged 36, who, having been exposed, went into *other localities*,* and came down with fever as near like that to which they had been exposed as one case of small pox is like another; together with that of W—— D——, aged 24, mentioned above as having died on the 18th day of intestinal ulceration, and who came from a healthy neighborhood to do farm work, only coming into the house at meal times and to sleep; one death occurring in the family about one week after his arrival, others slowly convalescing; in four weeks and three days after he came to the house, he was seized with the same fever: as calculated to aid in removing his doubts.

The importance of the question of contagion in its influence upon the welfare of the community, and the opinions and action of the medical profession, must be my apology for the tediousness of this article. The three epidemics had no causative connection with each other; the one was not a continuation of that which preceded, and were they not different diseases? They were as near alike in their general features, mode of access, and of convalescence, as any three distinct epidemics of scarlatina or small-pox; each had some features as to mildness or severity differing from the others, owing perhaps to different atmospheric or meteoric conditions. Head symptoms

* On careful inquiry, I learn that no fever of any kind either did or had for many months prevailed in the places where they were, when seized with fever, nor were there any cases of the disease afterwards in either locality.

were more constant, and delirium of a low, passive character was present in a larger proportion of the cases, during the first than during the second visitation of the disease, while the abdominal complication was more early present during its third appearance, while in this last and most fatal return of the pestilence, delirium was often wanting until near the termination of even the most grave cases. The typhus or typhoid, as you please, eruptions, called petechiæ, were found not more than four or five times among the whole number of cases (more than fifty in all), which occurred during the three years, and when observed in different years resembled each other as nearly as those cases which were seen during the same year. In all those cases where lividity of parts of the face, knuckles, &c., appeared, the blood was not coagulable, or very feebly so; while diarrhœa was a prominent symptom, and death often occurred by hemorrhage or ulceration of the bowels, or both conjoined, as was proved by examination.

The treatment pursued may seem to the reader as essential to complete the history of these cases; and had this paper been finished before the third and most fatal epidemic, the course of medication that insured the restoration of nearly nine-tenths of our patients would, perhaps, meet his approval. But when he came to learn from the sequel, that the same disease, as it appeared a year later in the same locality (and that an uncommonly salubrious one), was treated for the most part by the same practitioners, and on the same therapeutic principles; and that this treatment, formerly so successful, was now followed by a ratio of mortality amounting to near forty per cent., his confidence in the treatment pursued might, and very likely would, be much diminished. Success is the test by which the merit of medical treatment is measured. The skill necessary to conduct mild cases of fever through to health, in those epidemics which are not marked by malignity, where generous reaction comes on, and the local complications are under remedial control, and where the disease tends toward a favorable termination, is but to maintain a masterly inactivity. Success here comes to crown us skilful, if we but watch and wait.

When in another epidemic of the same or a like disease,

our patients begin to die, almost before *they* know they are sick, and go on slowly but surely to death by the local accompaniments of the disease, over which remedies exert little or no control; we must support nature in her arduous labors, and by food easy of digestion, and wine or other stimulants, *try to keep the patient alive*, by aiding constitutional power, and husbanding his vital resources. To maintain the vital powers until the *morbid poison** is eliminated from his system by the outlets where it specifically seeks an exit, the glands of Peyer, the lack of fibrin in the liquefied blood, being temporarily supplied by the stimulating food and wine, until the determinate duration of the eliminative process which constitutes the disease is past, and the work of repairing the ulcerated bowels, and reforming the changed blood is complete, is the utmost that the physician must expect to do in aid of nature during the critical period of the disease, and a necessarily tedious convalescence.

If I might venture an opinion, as to treatment, in connection with the torpor of the capillary system, which is almost always present in severe cases, it would be, that opium, from its known tendency to obstruct the free circulation of the blood in the capillaries, is contra-indicated; and that opiate enemata for the diarrhœa, and morphine, or crude opium, or pulv. ipecac. comp., or even tinct. opii acetat. should not be given for restlessness, or insomnia, where lividity of parts of the face, evincing capillary torpor, appears. In three cases, where my patients were likely to die for want of sleep, although one was suffering great prostration and diarrhœa, I gave tartar emetic and laudanum, on the recommendation of Dr. Graves, of Dublin, with the most gratifying results. Is not the antimony in Graves' formula (*Graves' Clinical Lectures by Gerhard*) a corrective of the opium, chiefly by stimulating the fine blood-

* "Typhoid material," "materies morbi," which is formed in the blood by the infecting principle or agent, and which is (perhaps?) but a vastly augmented amount of that principle or agent formed during the period of incubation and access, from materials found plentifully in the blood of some persons and wanting in others, by which we may account for the unsusceptibility of some persons, and the infrequency of a second attack.

vessels? Another suggestion; mercurials of the milder kinds—hydrarg. cum creta, &c.,—seemed very serviceable in relieving the bronchial complications, and re-establishing the secretions of the pulmonary membrane, but aggravated, I think, the abdominal lesions. One fact I should have stated, that bed-sores occurred in but one case, and in three cases boils of a diffused base, and which discharged sanies rather than pus, ushered in and accompanied tedious convalescence.

I will state a little cluster of fever facts in conclusion. In July last, two and a half months after the occurrence of the last previous case of fever, E—— P——, living nearly a mile distant from the family of M——, where three died and six recovered, was seized with the same fever. His wife, who nursed him and his child, aged nearly three years, were attacked four and a half weeks after his seizure; his brother in three weeks; and his sister and mother, the one in seven weeks and the other in eight weeks from the time of his attack; all occupied the same house. E. P. and his wife had assisted in M.'s family during the fever, from two and a half to four months before, and he had been ill with headache and symptoms uncommon to him, at three different times, between his exposure in the spring, and his seizure in July. A lady, who had fever at M.'s, removed to P.'s in June, and took with her bedding, which had been used during the previous fever. Did P.'s disease lie *dormant* in the state of incubation, except three *ineffectual struggles* for the mastery all that time? or did he contract the disease of Mrs. M., or from her bedding, which had been thoroughly cleansed and aired? or was it spontaneously generated in his case by atmospheric vitiation, and by him communicated to the family? From the facts as developed and analyzed in my presence, I answer yes, to the first and last questions, and unequivocally no, to the second and third. The ages of the above patients were forty-one, three, twenty-four, nineteen, and sixty-two, which last, a female, died nine weeks after her attack, of scirrhus.

In conclusion; during the three epidemics, in fifty-two cases, twenty-nine were females and twenty-three were males; in twelve deaths, eight were females and four males; eight cases, three males and five females, were over sixty years

old ; three cases were seventy years of age or over, all males ; two deaths occurred in females over sixty years of age ; two cases in children, one ten, the other three years old ; all the remaining cases were between the ages of fifteen and forty-five, and nearly two-thirds of them between twenty and thirty. Five cases appeared in the summer ; three in the spring ; thirteen in autumn, after cold weather commenced, and more than thirty in winter. Until the last epidemic no person was attacked with fever after the winter broke. No other form of prevailing disease occurred in either of the localities while the fever prevailed, and acute rheumatism, and inflammation of the lungs, which are very common over these high hills during the winter months, were banished until the fever declined each year. Myself and many exposed persons who escaped fever, had many of the characteristic symptoms which often preceded, and ushered in an attack, during each of the three winters. In no case was the fever broken up, however, after being formed, i. e. after chills, or chilliness, followed by fever and the characteristic pains in eyeballs, back of neck, &c.

The case of J. P—— was not a case of fever, but clearly a local inflammation, which called for, and got treatment that no sane man would have dared to pursue in a disease of diminished vitality, such as these fevers almost invariably wore. I did intend to describe minutely the living symptoms, and the post-mortem appearance in the cases of B. C——, Mrs. N——, and W. D——, but must reserve this task for a future occasion.

ART. III.—*Statistics of the Operation of Amputation at the Hip-Joint.* BY STEPHEN SMITH, M. D.

WHILE engaged recently in collecting some of the statistics in relation to amputation at the knee-joint, I directed my attention also to the same operation when performed at other large articulations. It was not until I had nearly completed the collection of the published cases of amputation at the hip-joint, that I had an opportunity of consulting the Memoir of Mr. Sands Cox upon the same subject, and there learned for the first, that this gentleman had made a similar collection for a

somewhat similar purpose. Here my labors would have ceased, but for the reflection that this collection contained some errors, that it has now been published several years, during which several cases have been reported, but principally that its foreign and expensive form of publication almost wholly excludes it from the profession in this country. I am chiefly indebted to this Memoir for reference to several cases, and for the date at which some operations were performed.

Amputation at the hip-joint was first noticed by the elder Morand, and subsequently brought prominently before the Academy of Surgery of Paris, by his students, Wholer and Pauthod, as early as 1739. In 1743, Ravaton proposed to perform this operation on a person suffering from a gun-shot wound of the thigh, but was overruled by his colleagues; in 1748, La Croix disarticulated the femur at the hip-joint, at the Hotel Dieu d'Orleans, for the first time in the history of modern surgery. In this case, the thigh was separated at its coxo-femoral articulation by gangrene, except the round ligament and sciatic nerve, requiring only that these should be divided with scissors to complete the operation. This patient went on favorably for several days, but fever supervening, he died on the fifteenth day. Barbet, whose essay received the prize offered by the Academy of Surgery in 1759, in regard to the propriety of this operation, founded his opinion in favor of it, in some degree upon this case. The second recorded case, and the first which proved successful, was performed by Per-rault, of St. Maure, Tourraine, in 1773.* This was also a case of gangrene, extending nearly to the pelvis. In the following year Kerr, of Northampton, performed this operation, for the first time in England. About the same time, Mr. H. Thompson of the London Hospital, is supposed to have amputated at the hip-joint, but nothing satisfactory can be learned either in regard to the date or result of the operation. It is from the uncertainty of this case, that early English writers have asserted that this operation was first performed in England, and S. Cooper, (*Dict. of Surg. Art. Amput.*) labored under the

* SABATIER, *Médecine Opératoire*, t. iv. p. 542. *Medical and Physical Commentaries*, vol. iv.

still greater mistake of supposing that Kerr's case was the second ever performed. Mr. South has given due credit to the French operations.*

Previously to 1800, this operation had been performed fifteen times, of which six were reported as successful; the recoveries to the deaths being as two to three, or a mortality of sixty per cent. Of these fifteen cases, all but two were performed by French surgeons; excluding the two English cases, both of which were unsuccessful, and the ratio of recoveries to the deaths stands as six to seven, or a mortality of nearly fifty-four per cent. In two-thirds of these examples the operation was performed in military practice, four proving successful to six fatal. These results had the effect to direct attention strongly to the operation, and during the twenty years subsequently to 1800, it became of much more frequent occurrence, although the ratio of mortality was very considerably increased. During this period there were performed twenty-four operations, of which eighteen proved fatal, giving a mortality of seventy-five per cent. Of this number six occurred in continental practice, having a ratio of recoveries to deaths of one to five, or a mortality of over eighty-two per cent; seventeen occurred in English practice, of which four were successful; giving a mortality of over seventy-six per cent. The remaining one case was contributed by this country, and was successful. The operator was Dr. Walter Brashear, then of Kentucky, but recently of New Orleans; this was the first case of amputation at the hip-joint performed in this country, and has the additional merit of being successful.

During the next twenty years, ending with 1839, there are reported forty-two cases, of which twenty-nine were fatal, eleven successful, and two doubtful; admitting the doubtful among the fatal, and they give a mortality of nearly seventy-four per cent. The mortality of the operations on the Continent for this period, was over eighty-three per cent.; in British practice about fifty-four and one-half per cent., and in this country fifty per cent. American practice contributed two cases, one successful, and one fatal.

* SOUTH'S CHELIUS, vol. iv.

During the last twelve years, the number of operations reported is twenty-one, of which eighteen were successful and three fatal, being a mortality of a little over fourteen per cent. For this period Continental practice contributes seven operations, all successful ; British practice seven operations, and six successful ; American practice, eight operations, and six successful.

In reviewing the history of this operation thus briefly sketched, it will be seen that the per centage of mortality has not gradually diminished from the earliest introduction of the operation, but quite abruptly. Thus for the twelve years previously to 1840, there were twenty-nine cases reported, of which six were successful, and twenty-three fatal, being a mortality of over seventy-nine per cent. ; while for the twelve years subsequently to that date, as already noticed, the mortality was reduced to but fourteen per cent. It is difficult to account for this feature in the history of the operation, except in a general way ; for the ratio of accidents and injuries to chronic diseases of the thigh, remains nearly the same in both periods. We may suspect, however, that the cases were better selected, that the operation was more skilfully executed, and above all, that much is due to the employment of anæsthetics.

It does not enter into the design of this paper to discuss the merits of the different methods adopted to perform the operation ; but it may not be uninteresting to some, in this connection, to allude to them in a general way. They are, for the most part, but modifications of the three operations which have been practised in amputation in the continuity of the thigh, viz., *the flap, the circular, and the oval*. The *flap* may be *single* or *double* ; when single it may be *posterior, anterior, internal*, or *external* ; when double they may be *anterior and posterior* or *internal and external*. The *circular* operation was first introduced by Abernethy, and has been adopted by several eminent surgeons, but in no instance where it has been followed has the case terminated successfully. Professor Brainard is the only operator in this country who has adopted this method, so far as the history of the several operations have been given, and his case terminated fatally, after repeated hemorrhages, in about six weeks subsequently to the opera-

tion. The *oval* method, deduced by Scoutetten from Guthrie's operation, which was a combination of the double flap and oval, has been but rarely practised on the living subject. According to Velpeau, M. Baudens adopted it in his successful case, but it is elsewhere differently reported. These three principal operations and their divisions and subdivisions, have been still farther modified by successive operators, until the whole forms a chapter of tedious and uninteresting minutiae, in regard to an operation which admits of so few important variations.

Of these several methods, that of the double flap has been much the most frequently practised, formerly with internal and external, but latterly with anterior and posterior flaps. It may be said of this operation, although no test of its merit, that in all the successful cases where the details of the operation have been given, this method has, with a single exception, been followed. The plan of placing a ligature around the femoral artery before proceeding to the amputation, once considered very essential, is now abandoned for compression. But, doubtless, the most important improvement, and that which will tend more strongly than all others to reduce the mortality of this, as of all severe operations, is the introduction of anæsthetics into surgical practice. The first case in which they were employed in amputation at the hip-joint was that of M. Hénot, in 1847, which was successful, the patient having inhaled ether. M. Guersant first used chloroform, and with the most favorable results; more recently it has been employed by Mr. Wigstrom and Drs. Van Buren and Bradbury in their successful cases. Dr. May made use of chloric ether in his operation with similar success.

The improvements in this operation, which have been suggested by American as well as foreign operators, are based upon the opinion of Mr. Guthrie, "that the success of the operation depends very much upon the quickness with which it is performed, not on account of hemorrhage, but to avoid the shock the constitution receives from the continued exposure and irritation of so large a surface in the immediate vicinity of the trunk of the body."* Dr. Mott modified Larrey's

* GUTHRIE'S *Treatise on Gun-Shot Wounds*, p. 364, 3d edit. Lond. 1827.

method by cutting from without inwards in making the external flap. Ashmead, of Philadelphia, slightly modified the operations of Plantade and Manec, the double flap method, the flaps being made anteriorly and posteriorly.

Dr. Van Buren describes his method as "nothing more than a modification of Liston's operation with anterior-posterior flaps, in which the posterior flap is made by cutting from without inwards towards the bone, instead of in the opposite direction, the disarticulation of the thigh being left to the last." He believes, "from repeated trials, that this operation could be invariably done in less than a minute by the most unpractised hand at all accustomed to surgical operations, and by a little practice in less than half the time mentioned, as was the case with my patient." Dr. Mott, who was present at the operation, expressed an opinion favorable to the method adopted. The operation here ascribed to Mr. Liston is that of Bèlard's.

Professor May remarks of his operation, "that which I selected was the double flap operation (the anterior and posterior flap), as recommended by Bèlard, with a slight modification of my own, viz., that of introducing the knife at the inside just above the tuberosity of the ischium, instead of at the outside, below the spinous process of the ilium." He prefers this method "from the facility and security with which the hemorrhage can be commanded;" and because "this operation can be performed with greater celerity than by any other mode of amputating at the hip joint." The extent of surface divided is so great, and the vessels (independent of the femoral) so numerous, that any delay or bungling in the operation might and probably would compromise the life of the patient. I have no doubt that it has happened more than once, that he has died on the table from hemorrhage, when the shock to the system has been made to bear the blame."

Dr. Bradbury operated according to the same method as above given, but modified in the following manner: "When about to form the posterior flap, it was observed that the great enlargement of the limb, the indurated and consolidated condition of the tissues to near the base of the first incision, would constitute a barrier to the introduction and passage of the

knife around the femur, so as to embrace all the remaining tissues, and give the flaps the dimensions desired. The knife was, therefore, introduced in nearly a perpendicular direction, on the external side of the bone, and carried out posteriorly, splitting the posterior flap in the middle; then in like manner on the inside of the bone, making three flaps, the two last of nearly equal size, an external lateral flap, a posterior and an anterior." This method furnishes a very pending and accessible channel for the exit of the ligatures and secretions. The greater flexibility of the flaps favored a more perfect coaptation to each other, and to the cavity of the acetabulum, leaving less space to be filled by granulations, and consequently was more favorable to union by the first intention; and, again, it is accomplished with great facility. A more perfect adaptation of parts, or a more symmetrical stump, it is not easy to conceive."

If we may be allowed to venture an opinion, from an attentive consideration of the facts here presented, we should say that "*quickness*" in the performance of this operation, as a point to be studied, is as ill-advised as it would be in any other severe and dangerous operation in surgery. The dangers from hemorrhage certainly have no existence in practice; on the contrary, in two cases at least, in which there was a troublesome oozing of blood, the wound was exposed to the air for some time, as in other amputations, with the effect to stop the bleeding and dry the wound. Mr. Guthrie, by a slight mis-quotation of the above extract from his work, has been made to advise a quick operation from the fear of hemorrhage. Such is not, however, the opinion of that surgeon; and he elsewhere states very positively, that "the danger arising from loss of blood is proved to be trifling, and no bad consequence has ever resulted from it." The second reason, that a "quick" operation will obviate the danger from a shock to the system, is not less tenable; for, in the first place, as these cases sufficiently attest, patients very rarely indeed die of the primary effects of the operation, but remotely from an extension of the disease, or some complication foreign to the operation; and, secondly, in at least three of the most successful cases the operation was purposely prolonged, in one

to check hemorrhage if it should occur, and in the other two to stop the oozing by exposure of the wound to the air. The congratulations of the friends of Mr. Syme on the celerity with which he first disarticulated the thigh, compared with the slow operation of Sir Astley Cooper, must have been turned to bitter irony when he compared the fatal result in his own with the successful issue in Sir Astley's case. Mr. Guthrie, who first gave currency to the opinion from which we here dissent, remarks, "the shock to the constitution or system at large, although undeniably great, has been proved not to be beyond its powers of supporting." A reviewer in the *Dublin Quarterly Journal* believes that the cause of death in amputation at the hip-joint, is neither the loss of blood by hemorrhage or the shock to the system, because death usually follows the operation too remotely; "but the abstracting so much in the limb, being one-fourth or fifth of the entire blood in the body, while the viscera still continue to act as though none were removed." As we discover among the causes of death in no instance the tardiness with which the operation was performed, although this is a marked feature in several cases of recovery, we must conclude that the rule still has universal application in operative surgery, "whatever is well done, is quickly done."

AMPUTATIONS

SEX.	AGE.	DISEASE OR ACCIDENT.	CONDITION.	DATE AND RE
1. M.	14.	Gangrene of both lower limbs from eating diseased rye.	Suppuration had disarticulated right thigh except the round ligament and sciatic nerve.	1748. Died
2. M.	21.	Right thigh crushed between pole of carriage and wall.	Gangrene and sloughing to a frightful extent, and thigh nearly disarticulated.	1773. Cure
3.		Gun-shot wound and fracture of the femur.		1793. Die third day.
4. M.		Compound fracture of thigh from a gun-shot.		1794. Cure
5. M.		Compound fracture of thigh from a gun-shot.		1794. Cure
6. M.				1794. Die 58th day.
7. M.		Compound fracture of thigh from a gun-shot.		1798. Cure
8. F.	13.			1798. Cure
9. M.		Fracture of the femur from the bursting of a bomb-shell.		1799. Die
10. M.		Fracture of femur and severe injury of right thigh from bursting of a bomb-shell.	Femoral artery was torn, and he lost considerable blood.	1799. Die 7th day.
11. M.	20.	Right thigh carried away at its middle by a splinter of a bomb-shell.	Fracture of femur, extended as far as joint; soft parts bruised and disorganized; in extreme pain.	1799. Die
12. M.		Very extensive gun-shot wound of thigh with fracture of bone to trochanter.	Suffered severe pain; begged to have the operation performed.	1809. Die 3 hours.
13. M.		Same injuries as number 12.	Symptoms and condition as number 12.	1809. Die several hours.
14. F.	7.	Tumor of the thigh.	Patient scrofulous; tumor very large and painful.	1812. Cure

CONTINENTAL PRACTICE.

OPERATION.	REMARKS.	AUTHORITY.
Separated the attachments with scissors.	Four days after, amputated the left thigh, did well to tenth day, fever set in, she died on the fifteenth day.	LA CROIX. <i>Sabatier, Méd. Op.</i> , tom. iv., p. 672.
	Convalesced without any unfavorable symptoms; seen twenty years after.	M. PERAULT. <i>Sabatier Méd. Op.</i> , tom. iv., p. 672.
Lateral flaps.	Operation performed without accident, relieved; had to undergo a journey of twenty-four hours in winter, which proved fatal.	M. LARREY. <i>Mem. of Military Surgery</i> , vol. ii.
Lateral flaps.		M. BLANDIN. <i>Mott's Velpeau</i> , vol. ii. p. 638.
		M. BLANDIN. Ditto.
		M. BLANDIN. Ditto.
		M. PERRET. <i>Mott's Velpeau</i> , vol. ii, p. 638.
		M. MULDER. <i>Cyclop. Pract. Surg.</i> , part iv., p. 182.
Lateral flaps.	Passed several hours comfortably, but was obliged to undergo a hurried journey of twenty-four hours, in the winter, after which he sunk and died.	M. LARREY. <i>Memoirs of Military Surgery</i> , vol. ii.
Lateral flaps.	For six days seemed in a fair way for recovery; took the plague, and on the seventh day died, the stump becoming gangrenous.	M. LARREY. Idem.
Lateral flaps.	Relief to his sufferings followed; was obliged to be moved with the army, and died on the road.	M. LARREY. Idem.
Lateral flaps.	Patient was in a prostrated condition; pulse scarcely perceptible.	M. LARREY. Idem.
Lateral flaps.	Operation as in number 12, was performed at the solicitation of patient, and contrary to opinion of operator.	M. LARREY. Idem.
Compressed the artery; lateral flaps.	Wound healed; health reëstablished; about to be discharged when she was seized with diarrhœa, and died three months after operation.	M. BAFFOR'S <i>Bulletin de la Faculté de Médecine</i> , tom. viii., 1812.

SEX.	AGE.	DISEASE OR ACCIDENT.	CONDITION.	DATE AND RESULT.
15. M.		Very extensive gun-shot wound of thigh; comminuted fracture of bone.	In favorable condition.	1813. Died on 29th day.
16. M.	25	Enormous encephaloid tumor of thigh, extending above the trochanter.	Emaciated, suffered constant and severe pain; tumor elastic, but not fluctuating.	1820. Died in 9 weeks.
17. F.	50	Necrosis of femur—with abscesses.	Discharge of bone through fistulous passages; severe pain.	1821. Died on 12th day.
18. F.	42	Cancerous tumor of thigh.	Dangerous hemorrhage in attempting to extirpate the tumor.	1824. Died on 9th day.
19. M.	34	Necrosis of femur existing nineteen years.	Abscess formed, resulting in fistulas, which had long existed.	1824. Cured.
20. M.	21	Tumor grew on thigh-bone, was fractured and untreated.	Extensive suppuration, emaciation, hectic; in a sinking and destitute condition.	1824. Died on 11th day.
21. M.		Comminuted fracture of the thigh-bone.	Fragments passed each other with muscle between the extremities.	1827. Cured.
22. M.	26	Scrofulous disease of thigh following injuries.	Scrofulous habit; pale, feeble, sickly appearance.	1831. Died on 14th day.
23. F.	25	Caries of knee followed by necrosis of femur.	Extensive suppuration and great suffering.	1832. Cured.
24. F.	15	Malignant tumor of knee and thigh, with spontaneous fracture of femur.	Great suffering and failing health.	1832. Died on 11th day.
25. F.	26	Immense osteo-sarcomatous tumor of thigh.	Fluctuating in some parts; in others of cartilaginous hardness; superficial veins greatly dilated.	1834. Died on 20th day.
26.	13	Osteo-sarcoma of thigh.	Scrofulous habit of body.	1834. Died on 13th day.
27.		Fracture through trochanters.	Extensive suppuration; emaciated; symptoms of sinking.	1834. Died in 10 hours.
28. M.		Gun-shot wound of thigh and fracture of trochanter.	Great exhaustion from previous suppuration.	1835. Died during operation.

OPERATION.	REMARKS.	AUTHORITY.
Lateral flaps.	Ligatures had come away, cicatrization to some extent, when he was imprudent in diet, had fever and dysentery which proved fatal.	M. LARREY. <i>Memoirs of Military Surg.</i> , vol. iii.
Lateral flaps; first tying artery.	Severe hemorrhage, which had to be controlled by styptic powders; slowly convalesced; cicatrization did not commence in two months; was imprudent in diet.	M. PELIKEN. <i>Med. Chir. Trans. of the Imperial Acad. of Wilna</i> , 1839.
Lateral flaps; first secured the artery.	Severe hemorrhage followed; violent fever, wound opened; profunda artery arose above Poupert's ligament.	M. PORCIENKO. Ditto.
Ligated artery to stop hemorrhage, then amputated at hip joint.	Had tetanic spasms on ninth day; wound did not unite; cancer was found in lungs and pleuræ.	M. GERDY. <i>Bulletin Gén. de Therap.</i> , 1835.
First secured the artery; lateral flaps.	Found great difficulty in bringing the flaps over the articulation; union nearly complete on eighth day; cure complete in six weeks.	M. DELPECH. <i>Revue Médicale</i> , Sept. 1824.
Lateral flaps.	Did well for a time, but an ulcer on sacrum became gangrenous, and he died of exhaustion.	VON WALTHER. <i>Graef et Walther Jour.</i> , vol. vi.
First secured the artery; single flap on inside of the thigh.	Union by first intention; six months afterwards symptoms of chronic peritonitis occurred which proved fatal.	M. DELPECH. <i>Jour. Gén. de Méd.</i> , 1828.
Anterior and posterior flaps.	Did not wish union by first intention; bone soft and of a reddish appearance on section.	M. VELPEAU. <i>London Med. Gaz.</i> , vol. viii.
Compressed artery; lateral flaps.	Intended to amputate thigh, but found bone too much diseased; cicatrization nearly complete on fiftieth day.	Prof. JAEGER. <i>Zeitschrift für die gesammte Méd.</i> , Band. 3.
Ligated artery first; lateral flaps; tied femoral vein.	Did well for a time, symptoms of phlebitis arose which proved fatal.	M. BLANDIN. <i>Transactions Médicales</i> , vol. x.
Compressed the artery; circular operation.	Following day had fever and diarrhœa; got better; on eighth day union had commenced; on fifteenth day very favorable. Extensive suppuration; death followed from exhaustion. Patient bore operation well; lost but little blood; pulse grew feeble and surface cold; died 43 days after accident.	KORSENIIEWSKI. <i>Med. Clin. Trans. of Imperial Acad. of Wilna</i> , 1839. DIEFFENBACH. <i>London Lancet</i> , 1834-5. DIEFFENBACH. <i>Jour. Univers. des. Sci.</i> , vol. xlviii.
Lateral flaps.		M. ROUX. <i>Gazette des Hopitaux</i> , 1830.

SEX.	AGE.	DISEASE OR ACCIDENT.	CONDITION.	DATE AND RESULT.
29. M.	17	Fungous tumor of periosteum in upper part of thigh.		1835. Died several days after operation.
30. F.		Fracture of femur from a gun-shot wound.		1835. Died several days.
31. M.	24	Fracture of femur from a gun-shot wound.		1836. Cured.
32. M.	28	Compound comminuted fracture of thigh.	Extensive suppuration.	1840. Cured.
33.		Gangrene of stump followed amputation at knee-joint.	Gangrene extending up thigh.	1841. Cured.
34. M.	26	Large exostosis of right femur extending as high as trochanter.	Abscesses formed and fistulous passages; great suppuration and hectic symptoms.	1847. Cured.
35. M.	5	Cancerous affection of femur.		1848. Cured.

AMPUTATIONS

1. F.	12	Disease of right hip-joint.	Emaciated; suffering symptoms of hectic, suppuration of joint.	1774. Died 18th day.
2. M.		Gun-shot wound, with fracture of femur.		1812. Cured.
3. M.		Gun-shot wound, with fracture of femur.	Several months after had caries, with suppuration; hectic, and emaciation.	1814. Died 30th day.
4. M.		Thigh crushed by machinery.		1814. Died following day.
5. M.		Fracture of femur from gun-shot.	In a very unfavorable condition.	1814. Died 24 hours.
6. M.		Gun-shot wound.	In a very bad state.	1814. Died 8th day.
7. M.		Sloughing and hemorrhage after amputation of thigh for gun-shot wound.	Great prostration; ligature of femoral artery did not prevent bleeding.	1814. Died 7 hours.

OPERATION.	REMARKS.	AUTHORITY.
ligated the artery; lateral flaps.	Articulation found to be healthy.	M. ROUX. <i>Nouv. Bibl. Méd.</i> , 1830.
anterior and posterior flaps, according to Bécclard.	Convalescence complete in forty days.	CLOT BEY. <i>Gazette des Hopitaux</i> , tom. iv. M. BAUDENS. <i>Lancette Francaise</i> , 1836.
single anterior flap; used twenty-two ligatures.	Discharged cured in about ten weeks. So far recovered at the end of four months as to be able to walk about.	M. SEDILOTT. <i>Memoires de Chirurgie</i> , t. 1. M. TEXTOR. <i>Gaz. Médicale de Paris</i> , 1841.
anterior and posterior flaps, according to Bécclard, but modified.	Ether was administered; four-fifths healed by first intention; convalescence complete on 90th day. Cure complete in twenty-two days; chloroform successfully administered.	M. HENOT. <i>Archiv. Gén. de Med.</i> , 1847. M. GUERSANT. <i>Jour. de Med et de Chirurg. Prat.</i> , 1848.

BRITISH PRACTICE.

first incision from great trochanter backwardly to inside of thigh; second forward; artery divided and tied.	Acetabulum carious; lungs almost totally reduced to matter, especially on the right side; an abscess in abdomen opening into joint. Was seen after three years enjoying perfect health.	Mr. KERR. <i>Ed. Med. and Philosoph. Com.</i> , vol. vi., 1779.
mid bare artery and tied it; lateral flaps.	Had two attacks of hemorrhage from stump; condition very variable, and finally died of irritation and exhaustion. Operation performed immediately.	Mr BROWNRIGG, <i>Guthrie on Gunshot Wounds</i> , London, 1827. Dr. EMERY. <i>Guthrie on Gunshot Wounds</i> , London, 1827.
curcular incision, as if to amputate thigh, then cut up joint.		Mr. BADLEY. <i>Cox's Mem. on Ampu. at Hip Joint</i> .
plied fourteen ligatures; lateral flaps.	Profunda given off from external iliac; femoral perfectly open where ligated; last hemorrhage from small branches of profunda.	Mr. COLE. <i>Cooper's Surg. Dict.</i> , Art Ampu. Mr. BLICKE. <i>Guthrie on Gunshot Wounds</i> . Mr. GUTHRIE. <i>Work on Gunshot Wounds</i> .

SEX.	AGE.	DISEASE OR ACCIDENT.	CONDITION.	DATE AND RESULT.
8. M.				1814. Died on 8th day.
9. M.		Gun-shot wounds, and fracture of cervix femoris.	Exhausted; wound sloughing, ulcer on sacrum.	1815. Cured.
10. M.				1815. Died in 40 hours.
11. M.				1815. Died.
12. F.	19	Osteo-sarcoma of immense size.	Tumor involved nearly whole thigh; firm, pale, covered with enlarged veins.	1819. Died on 6th day.
13. M.	40	Disease of femur as high as trochanter, following amputation of thigh.	Stump very painful; rapidly failing.	1824. Cured.
14. M.	17	Necrosis of femur with extensive suppuration.	Much exhausted with long continued suppuration, (two years), thigh greatly swelled, painful; emaciated.	1823. Died after 8 weeks.
15. M.	25	Disease of knee, with caries of femur and a spontaneous fracture.	Leg became strongly flexed; extensive suppuration, with emaciation, hectic, and sinking.	1826. Cured.
16. M.	23	Gun-shot wound of thigh, and fracture of femur.	Vessels of thigh uninjured.	1827. Cured.
17.		Disease of femur from knee to the head of the bone.	Soft parts in a diseased condition.	1829. Died on 2d day.
18. F.	2	Compound fracture of femur at upper third.	Severe laceration of soft parts; artery torn but no bleeding.	1831. Cured.
19. M.		Compound fracture of femur by machinery.	Collapsed; thigh stripped of its integuments from knee to groin; lower portion of femur crushed.	1835. Died in 30 hours.
20. F.	22	Thigh had been amputated for long-continued pain of knee; pain returned in stump.	Nerve was resected, but with only temporary relief; nerve contained hard bodies; suppuration occurred, which relieved pain temporarily.	1836. Cured.
21. M.	26	Osteo-medullary sarcoma of femur.	Suffered severe pain for six years.	1843. Cured.

OPERATION.	REMARKS.	AUTHORITY.
Lateral flaps.	This patient died of fever, which had no connection with the operation. Reported nearly well at the end of eighteen weeks.	Mr. BROWNRIFF. <i>Guthrie on Gunshot Wounds.</i> Mr. GUTHRIE <i>On Gunshot Wounds.</i> Mr. BROWNFIELD. <i>Cooper's Lectures, London Lancet, 1824.</i>
Compressed the artery.		Mr. BROWNLEY. <i>Cooper's Lect., London Lancet, 1824.</i>
Artery compressed; lateral flaps.	The symptoms following operation were mild, slept well; wound enlarged very much with a tumor, which proved to be a cancerous degeneration of the muscle.	Mr. CARMICHAEL. <i>Trans. of Fellows of King's and Queen's Coll. of Phys., Ireland, vol. iii.</i>
Compressed artery; lateral flaps; applied four ligatures.	Operation performed very slowly; waited for hemorrhage to occur.	Sir A. COOPER. <i>London Lancet, vol. ii., 1824.</i>
Compressed artery; lateral flaps; used twelve ligatures.	Was greatly prostrated; suffered from irritability of stomach and diarrhœa; improved, wound nearly healed at end of a month, attacked with ascites, and died in eight weeks; liver enlarged, other organs healthy.	Mr. SYME. <i>Edin. Med. and Surg. Jour., vol. xxi.</i>
Single internal flap owing to diseased condition of integument; applied twelve ligatures.	Fainted during operation; suffered from diarrhœa, irritation of stomach; nearly well in six weeks; in robust health at end of three months.	Mr. ORTON. <i>Medico-Chirurg. Trans., vol. xiii.</i>
Lateral flaps; compressed the artery.	Flow of blood continued after ligature of vessels; ceased upon lengthened exposure to the air; convalescent in six weeks.	Mr. BRYCE. <i>Glasgow Med. Jour., Aug. 1830.</i>
Lateral flaps.	Lost but little blood; suffered severely from the shock of the operation.	Mr. LISTON. <i>Lond. Med. Gaz., vol. iii.</i>
Compressed artery; lateral flaps.	Operation was performed immediately; child became pulseless at close of operation, but reaction soon came on, and she gradually recovered; cure complete in five weeks.	Mr. MACFARLANE. <i>Clin. Reports of Surg. Cases at Glasgow Roy. Infr., 1832.</i>
First secured artery; anterior and posterior flaps.	The boy was of a scrofulous habit; lost a large quantity of blood before the operation, which prostrated him very much.	Mr. SMITH. <i>London Med. Gaz., vol. xvi.</i>
Ligated artery high up.	Severe prostration followed the operation; reaction came on, and she perfectly recovered; no disease of knee existed, but a neuralgic condition of the nerves of that limb.	Mr. MAYO. <i>London Lancet, 1836-7.</i>
Anterior and posterior flaps.	Left hospital six weeks after operation; wound healed by first intention; four months after died of a malignant disease, beginning as a tumor in hypochondrium.	Mr. HANDYSIDE, <i>London and Edin. Monthly Jour., 1845.</i>

SEX.	AGE.	DISEASE OR ACCIDENT.	CONDITION.	DATE AND RESULT.
2. F.	23	Disease of the stump of the thigh, which had been previously amputated.	Stump covered with fungous excrescences, tender and painful; has constant aching pain in the stump; general health good.	1844. Cured.
3. M.	31	Disease of right knee for eighteen months, following an injury.	Abscesses formed with free suppuration; knee became disorganized; an irregular form of bone could be traced along the whole extent of femur, and was considered malignant.	1846. Cured.
4. M.	24	Fracture of both legs from fall of a bank of earth; dislocation of ankle; amputated thigh; necrosis followed.	Attempted to save both legs; went on well for some days, but was seized with symptoms of phlebitis, got better, but suppuration followed; began to sink.	1848. Cured.
5. M.	18	Disease of eight years standing, extending from ankle to knee, and finally to femur with caries.	Extensive suppuration, involving thigh nearly to the hip; great emaciation, with symptoms of hectic and danger of sinking.	1849. Cured.

AMPUTATIONS IN

1.				1806. Cured.
2. M.	10	Fracture of right femur, improperly managed.	Extensive caries of femur; suppuration free, hectic symptoms; thigh resembled spina ventosa.	1824. Cured.
3. M.	25	Tumor of left thigh following fracture of the femur.		1837. Died 7 weeks after operation.
4.	child	Coxalgia.		1846. Cured.
5. M.	22	Thigh severed by rail-road cars.		1847. Died same day.
6. M.	23	Compound fracture of cervix femoris, by a musket ball.		1849. Died on 2d day.
7. M.	43	Osteo-cartilaginous exostosis of femur.	Nearly two years previously the thigh had been amputated for the same disease; after a year it returned with severe symptoms.	1850. Cured.

OPERATION.	REMARKS.	AUTHORITY.
Anterior and posterior flaps; used the horse-shoe compressor.	Nothing worthy of note occurred during convalescence; discharged at the end of about three months; six months after was in robust health.	WM. S. COX, Esq. <i>Mem. on Ampu. of Thigh at Hip-Joint</i> , Lond., 1845.
Applied the horse-shoe compressor; anterior and posterior flaps.	Slight oozing continued, and the wound was re-opened; no artery found; became collapsed, finally rallied, and was discharged cured on the sixtieth day; became very fat; disease in periosteum.	MR. J. WHIFFLE. <i>London Lancet</i> , 1846.
Anterior and posterior flaps; applied twenty-one ligatures.	Upon amputating the thigh, the bone had an ivory hardness, and the veins were thickened; wound did not heal, nor did the exposed bone exfoliate.	MR. SYME. <i>Monthly Journal of Med. Sciences</i> , 1848.
Anterior and posterior flaps.	Recovered without any unfavorable symptoms, but two ounces of blood lost; patient under the influence of chloroform.	MR. WIGSTROM. <i>London Lancet</i> , April, 1850.

AMERICAN PRACTICE.

Tied femoral and profunda arteries, the latter having a high origin: lateral flaps; seventeen ligatures. Made circular incision; compressed artery; applied seven ligatures; patient depressed by fear.	This case is also noticed as the first operation of the kind in this country, in the Report of the Committee on Surgery of the Am. Med. Assoc. <i>Vide Transactions</i> , &c. vol. iv Suffered from general irritation; in eight days two-thirds of stump was healed; in ten weeks cure was complete. Did perfectly well for a month; cough set in; a hard tumor grew rapidly in left groin; an aneurismal tumor arose on end of stump, which burst; tied femoral artery to control hemorrhage	DR. BRASHEAR. <i>New Orleans Med. and Surg. Jour.</i> , vol. ii. DR. MOTT. <i>Phil. Jour. of Med. and Phys. Sci.</i> , vol. v., N. S. DR. BRAINARD. <i>Am. Jour. of Med. Sci.</i> vol. xxii. DR. DUFFY. <i>Gibson's Surgery</i> , 8th ed. vol. ii., 1850.
Lateral flaps.	This case occurred in the New-York Hospital.	DR. BUEL. <i>Am. Jour. of Med. Sci.</i> July, 1848.
Lateral flaps.	This case also occurred in the New-York Hospital.	DR. LENTE. <i>Trans. Am. Med. Ass.</i> , vol. iv., 1851.
Anterior and posterior flaps, the latter being made by cutting from without inwards towards the bone.	Chloroform was administered with the best results; exhibited no signs of shock from operation; nine-tenths of wound united by first intention.	DR. VAN BUREN. <i>Trans. of N. Y. Acad. of Medicine</i> , vol. i.

SEX.	AGE.	DISEASE OR ACCIDENT.	CONDITION.	DATE AND RESULT.
B. M.	37	Scrofulous degeneration of knee and femur.	Great prostration; soft parts diseased and œdematous to groin; free suppuration.	1850. Cured.
				1851. Cured.
D. M.	10	Progressive disease of thigh after amputation; osteo-sarcoma following a severe injury of knee.	Strumous habit; long existing suppuration of thigh; emaciation; life threatened.	1851. Cured.
				Cured.

Summary of Cases occurring in Continental Practice.—

Whole number of operations, 35, of which 14 were successful, and 21 fatal; being a mortality of 60 per cent. *Sex*, 24 males, 7 females. *Age*, varying from 5 to 50. *Causes*, 17 were for severe injuries, of which 12 were gun-shot wounds; 7 recovered and 10 died; 16 were some chronic form of disease, involving extensive suppuration and constitutional deterioration; of these 6 recovered and 10 died; 2 not given.

Four died within 24 hours, of which 2 were in military service, amputation being performed at their own request contrary to the surgeon's wish; 2 were exhausted from previous disease; 1 died on the third day after a journey of twenty-four hours; of the remainder, 1 had the plague; 1 phlebitis; 2 sunk from exhaustion; 2 from imprudencies in diet had fever and dysentery; 1 fever; 1 tetanus; 2 doubtful. Of those whose time of death is uncertain, 1 died while being removed with the army; 1 died of fever. Anæsthetics were used in two cases, both successful; in one ether was employed, in the other chloroform.

In addition to the cases given in the tables, the following are

OPERATION.	REMARKS.	AUTHORITY.
Anterior and posterior flaps, first made by entering knife just above tuberosity of ischium, and emerging nearer ant. sup. process than trochanter; compressed artery in this flap.	Chloric ether administered very successfully; operation performed in thirty seconds; discharged in about four months in excellent health; acetabulum sound; femur greatly diseased. This case is reported to have occurred in Washington Co., Maryland.	Dr. MAY. <i>Am. Jour. of Med. Sci.</i> , 1851. <i>Trans. of Am. Med. Assoc.</i> , 1851. Drs. RICHARDS AND CLAGGETT. <i>Rept. of Com. on Surg. in Trans. Am. Med. Assoc.</i> , 1851.
Anterior and posterior flaps, the latter of which was divided, making three flaps.	Chloroform administered; on eighth day, wound seven-eighths healed; suppuration very trifling; went to school on fourteenth day after operation, and continued to do so during winter; specimen that of true osteosarcoma; joint healthy.	Dr. BRADBURY. <i>Bost. Med. and Surg. Jour.</i> , June 1852. Dr. FULLER, Norwich, Ct. Comm. by Dr. PARKER.

alluded to by authors, the result only being given. Of the successful cases, Orthon, Rossi, Hysern, Wedemeyer, Delauney, Langenbrek, have each had single examples. Of unsuccessful cases, Ravaton, Graef, Pelletan, Velpeau, Gouraud, Vidal, Gensoul, have each had 1; Kerst 2, Dupuytren 3. These cases added to the foregoing make the whole number of operations on the continent 53; of which 20 were successful and 33 fatal, increasing the mortality before given to over 62 per cent.

Summary of the Cases in British Practice.—Whole number of operations, 25, of which 11 were successful, and 14 fatal; being a mortality of 56 per cent. *Sex*, 18 males, 5 females, 1 not given. *Age*, varying from 2 to 40. *Causes*, 11 were for severe injuries, including gun-shot wounds; of these 7 were primary amputations, of which 4 died and 3 recovered; 4 were secondary amputations, of which 2 died and 2 recovered; in 11 some chronic form of disease, of which 5 died and 6 recovered; 2 not given. *Previous amputation* of thigh in 5 cases, 1 died and 4 recovered.

Two died within twenty-four hours; 4 between 24 and 48 hours; the remaining 6 between the 5th day and 8th week.

Of those dying within 24 hours, 1 had uncontrollable hemorrhage in an exhausted system; 1 was in a most unpromising condition from the severity of the injury. Of those dying between 24 and 48 hours, 1 suffered severely from the shock of the operation, 1 primary amputation after a severe injury; 2 not given. Of those dying after the 5th day, 4 died from extension of previous disease, 1 had fever not depending on the operation; 1 had ascites. In 1 chloroform was employed, and with success.

The following cases, as in the preceding summary, being too deficient in details to be admitted into tables, may here be noticed. Those reported as successful are Dr. Millengen, 2; that of an English sailor at the battle of Aboukir; as unsuccessful, Mr. Thompson, Mr. Brodie, Mr. Brownrigg (2), Mr. Syme, and Mr. Liston.* These cases, added to those already given, make the whole number of British operations 34; of which 14 were successful and 20 unsuccessful, being a mortality of over 58 $\frac{2}{3}$ per cent.

Summary of Cases occurring in American Practice.—Whole number of operations 11, of which 8 were successful and 3 fatal, being a mortality of 1 in 2 $\frac{2}{3}$, or of 27 $\frac{3}{11}$ per cent.; 7 were males, 4 not noted. Age, varying from 10 to 43, majority under thirty, 4 not given. Cause in 5 cases was some chronic form of disease, of which 4 recovered and 1 died; 2 were severe accidents with primary amputation, both fatal within 48 hours; one painful affection of joint, cured; 3 not given; 2 followed previous amputation of thigh, both of which were successful. The operation in 3 cases was performed with lateral flaps, 1 successful, 2 fatal; in 3 cases with anterior and posterior flaps, all successful; in 1 by the circular

* Mr. Cox, in his Memoir, gives Mr. S. Cooper the credit of an unsuccessful case, but this is a mistake. This surgeon began the operation in a severe case of fracture of the femur by a grape-shot, and "immediately the soft parts had been divided, as the bone was broken to pieces, the limb came off, leaving the head of the bone, the trochanters, and a small piece below them projecting. Had not the man appeared in a very bad way by the time the vessels had been secured, I should now have removed the head of the bone; but the shock of the operation was such that he survived it but a few minutes, though scarcely any blood was lost."—*Surg. Dict., Art. Ampu.*

method, which was fatal; 4 not given. In 3 cases anæsthetics were employed, all successful; in 2, chloroform was used, in 1, chloric ether.

General Summary of the Operation of Amputation at the Hip-Joint.

	Whole No.	Died.	Cured	Ratio of Mortality.	Per cent.
In Continental practice,	53	33	20		$62\frac{1}{3}$
In British “	34	20	14		56
In American “	11	3	8	1 in $2\frac{2}{3}$	$27\frac{3}{11}$
Total,	98	56	42		$57\frac{1}{2}$

Cause of Amputation in Sixty-two Cases.

	Severe Injuries.	Died.	Cur'd.	Per cent. of deaths.	Chronic Disease.	Died.	Cur'd.	Per cent. of deaths.
In Continental practice,	17	10	7	$58\frac{1}{2}$	16	10	6	25
In British “	11	6	5	$54\frac{5}{11}$	11	5	6	$54\frac{5}{11}$
In American “	2	2		100	5	1	4	20
Total,	30	18	12	60	32	16	16	50

ART. IV.—*Case of Carcinoma of the Eyelid—Blepharoplasty Operation after Dieffenbach's Method.* By C. THEODOR MEIER, M. D., of New-York.

MRS. L., sixty-eight years old, with the exception of some derangement of digestion caused by hypertrophy of the liver, enjoyed, in general, good health, noticed about ten years ago a wartlike excrescence upon the lower eyelid of the left eye, which, growing slowly, was removed four years ago by simple excision. But again a hard swelling in the eyelid and upon the lower margin of the orbit developed itself gradually

in size, and encroached upon the conjunctiva, the orbit, and downward upon the cheek. When I saw the patient in October, 1851, the hard tumor with an uneven surface was very little movable, therefore I anticipated the tumor being adherent to the periosteum. In November the skin of the eyelid began to ulcerate; and in January, 1852, a deep excavation, with hard, thick edges showed itself, from which a serous and bloody liquid was discharged. The diagnosis as of carcinoma of the eyelid was clear enough. The patient suffered a great deal from lancinating pains, hemorrhage, inflammation of the conjunctiva, and want of sleep; and having had the advice and different opinions of professional gentlemen about the disease, desired the operation very strongly.

On the 18th of February, 1852, the operation was performed with the kind assistance of Dr. Tellkamp and Dr. Gurdon Buck, of New-York. No ether or chloroform was administered, owing to valvular disease of the heart.

From the interior corner of the eyelid next to the lachrymal point, I commenced an incision downward to the cheek, then from the same point close to the border of the eyelid a horizontal incision was made to the external corner, thus preserving a very small linear part of the border of the eyelid. A third incision, beginning at the termination of the second, was carried downward to the cheek, connecting with the first in an acute angle. These three incisions formed a triangular space, and included all the diseased parts, which were removed as carefully as possible, being in intimate connection with the periosteum, and stretching into the orbit and partially under the eyeball itself.

This great defect of the eyelid had now to be replaced, and this was done in the following way: A nearly horizontal incision, from the external corner of the eyelid to the temple, about one inch and three quarters long, was made, and from the termination of this incision the scalpel was carried downward over the cheek nearly parallel with the external side of the triangle that was formed by the defect; the incision terminated on the same line with the inferior point of the triangle. Both these incisions included the flap designed for the new eyelid, and then a thick flap was separated from the subjacent

tissues. After the bleeding stopped, the flap was sideways displaced and adapted to the defect of the eyelid, so that the above-mentioned triangular space was completely covered. The inner border of the flap was now brought in connection with the inner side of the triangle by means of six interrupted sutures; the horizontal border of the flap was united with that very small remaining part of the border of the eyelid by four sutures; besides these, one suture was applied on the external commissure of the eyelid. The deficiency of skin over the cheek, wherefrom the flap was taken, was left ununited only with the exception of a single suture on the most external part of the wound.

Fig. B.

Fig. A.

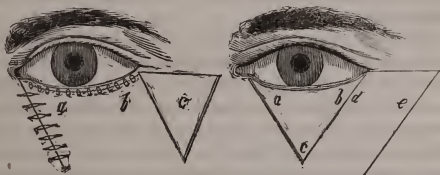


Fig. A and B show plainly enough the steps taken in this operation. Fig. A, *a, b, c* is the the triangle, or the defect of the eyelid after the removal of the diseased parts, *d e* the flap. Fig. B, *a b* shows the flap as it covers the defect, and united by sutures; *c* the place where the flap is detached from, the wound left untouched.

The raw surface of the wound over the cheek was covered with lint moistened with warm water, and ice-water applications ordered. The night of the following day, high fever, inflammation, and swelling of both eyelids, set in, extending even to the right eye. Leeches were applied behind the left ear, and ice-water continually applied during two days and nights over the face and forehead. From the fourth to the ninth day, all the pins and sutures were removed one after the other; and a few small straps applied. The flap had united by its borders to the surrounding parts, but the posterior surface of the flap did not unite immediately with the subjacent tissues; and in the first weeks a great deal of purulent matter was discharged, that forced its way partially through the

newly-united inner corner of the eyelid, partially through the outer border of the flap. This discharge ceased after the lapse of seven weeks, the flap being entirely adherent at all parts; the wound over the cheek had, three weeks after the operation, completely cicatrized, and left a very small scar. The shape of the eyelid appeared very good, only a slight ectropium had gradually formed in consequence of the contraction of the transplanted eyelid. As the carcinomatous destruction had involved most of the fibres of the orbicular muscle, the mobility of the eyelid was limited. The first week after the operation a prick with the point of a needle on the upper part of the flap could not be felt; but in the second week normal sensation recurred. Up to this time, July 1852, no relapse has taken place, and the general health of the patient is very satisfactory.

The method on which this operation was performed was Dieffenbach's method of sideways displacement, (*déplacement lateral*), a method he improvised at first in 1835, at Paris, in Lisfranc's Clinique, on a patient, whose inferior eyelid was destroyed by carcinoma. The idea of this method is, that the wound over the cheek, fig. B, c, healing by the gradual process of granulation and cicatrization, stretches and draws out the surrounding tissues, especially the flap itself, thereby preventing the new eyelid from contracting or coiling upon itself, as is always the tendency with transplanted skin. Left to this tendency, the object of forming a natural-looking eyelid could not be attained, and instead of the regular shape of the eyelid, there would be seen in its place a round and prominent piece of skin.

The second advantage which this operation possesses is, that the flap, having a broad root, keeps up a free and undisturbed connection with the surrounding parts, from which the nourishing vessels of the flap enter; and the root of the flap, being formed close to the defect, is not exposed to be turned and twisted, as would be the case, where the flap is taken from a more remote part, where the connecting root has to be turned about two right angles. With this proceeding there is greater probability that the circulation of the flap will not be disturbed, and the chance of preserving the flap, and of union by the first intention, is therefore greatly increased.

ART V.—*Case of Dissection Wound, followed by great Constitutional Disturbance, and Death on the eighth day.* By W. D. PURPLE, M. D., of Greene, New-York.

[THE death of Dr. G. L. Spencer will have been noticed under the obituary head of our last number, and, from the character of the disease that terminated his professional career, is well worthy of a more extended notice. We take the liberty, therefore, of submitting the following extract from a letter to the Editor, from W. D. Purple, M. D., of Greene, who was a neighbor of Dr. S., and visited him during his last illness.—ED. JOURNAL.]

“On Thursday, the 10th of June, Dr. Spencer performed a post-mortem operation on the body of Mrs. Rich, who had been in feeble health with disease of the lungs for some months. About ten days previous to her death, more active symptoms confined her to her bed. Her symptoms before death, and ocular demonstration after, evinced extensive disease of both lobes of the lungs, and inflammation of the serous membrane. The cavities of the chest and abdomen were filled with a sero-purulent fluid, and a diffuse cellular inflammation was apparent. There was no erysipelatous affection of the skin, nor any other symptoms or appearances that do not appear in such diseases in our most respectable families.

“The autopsy was performed twenty-four hours after death; and while in the act of closing the first incision with a needle, he slightly pricked his thumb on the left hand. It was very slight, did not bleed, and on examining it nothing could be seen nor felt, and he came to the conclusion that it might have been merely imaginary, and nothing further was thought of the matter, until about twenty-four hours after, he discovered a slight irritation at the place. He continued in active labor during the day, and towards evening was taken with a chill, with a sense of soreness over the whole body. The thumb became painful, and a reddish pustule of three or four lines in diameter appeared; dyspnœa soon supervened; this was accompanied by a depressed typhoid pulse, headache, and nausea. On Saturday, an erysipelatous redness, with great

tenderness, presented itself below the axilla on the left side, and after two days it had extended to the groin. The difficult breathing and the pustule had entirely subsided on Sunday. The hand and arm were entirely free from pain, and only a scabous surface was left upon the thumb. On Monday, the right foot and ankle assumed a reddish flush, and became painful. On Tuesday the pain had subsided, and the nervous system became entirely under the control of the animal poison; stupor succeeded, and he could with difficulty be aroused to consciousness. On the eighth day after the wound he expired. It is proper to observe that there was no evidence of diseased lymphatics of the arm, nor was there any enlargement or tenderness of the glands of the axilla or groin.

"The treatment he received was such as authority recommends. The poison had been generally diffused throughout the system before it attracted attention. The external application of nit. of silver and tr. iodine, with alteratives and stimulants internally, were freely resorted to. Anodynes to allay the irritation of the nervous system were not neglected. But all in vain. Death had marked him as his victim, and with an unerring shaft.

"The death of this excellent co-laborer in the field, and in such a manner, has filled the profession with the most profound regret. It has awakened an anxiety to know, if it can be known, what they have escaped, and under what circumstances they are exposed; although we have not neglected our duty in the search of pathological science, but have embraced every opportunity for post-mortem examinations; yet this is the first instance that has fallen under my observation where injury has resulted from a "dissection wound." I hope you or some of your correspondents who have access to extensive libraries, will enlighten us on this subject, and state what diseases are most liable to generate this species of animal poison; at what period after death it is the most virulent; what are preventives, and the best means of cure? what proportion prove fatal? with other statistic information in relation to this disease."

ART. VI.—*Upon Acute Gastritis, with Cases.* By JOHN A. LIDELL, M. D., of New-York.

ACUTE inflammation of the mucous membrane of the stomach, not produced by the action of corrosive poisons, is generally considered by medical writers to be a very rare disease. Dr. Thomas Watson uses the following strong language: "Idiopathic gastritis, in an acute form, I never saw."* In another place he says: "But as idiopathic gastritis is rare, fatal idiopathic gastritis is of course still more so. Louis states, that during six years' experience at La Charité, in which period he noted the details of 6,000 cases of disease, and of 500 dissections, he did not meet with a single instance of fatal idiopathic gastritis."† Preparatory to a narrative of several fatal cases of the disorder under consideration, M. Andral also remarks, that "for some years after the publication of M. Broussais' work on inflammation of the digestive passages, acute gastritis was considered by many physicians as a very common affection, and a number of acute disorders, widely differing from each other, were referred to it." However, more exact observation soon pointed out that acute inflammation of the stomach was not an affection so frequently met, and that in many cases its existence had been gratuitously supposed. This was the truth, but men did not keep to it. A reaction in a contrary direction soon took place; and some medical men went so far as to say, that acute gastritis, with the exception of that produced by corrosive poisons, was an inflammation so uncommon that they had not as yet met with a single instance of it."‡

No apology, therefore, is necessary for laying before the profession the narrative of the following cases, which we have met with during the past year, in the course of pathologico-anatomical investigation in a large field. All of them were cases of sudden death, which the coroner was called on to investigate. We did not see either of them during life. Their imperfect histories have been gathered principally from the testimony taken at the inquests.

We may remark in passing, that perhaps one reason why M. Louis and other gentlemen of large experience in hospital practice have so seldom met with acute idiopathic gastritis, is the rapidity with which death ensues, sometimes almost before the relations of the sick man, who are generally ignorant people, become alarmed,

* WATSON'S *Lectures*, p. 769. † *Op. Cit.* p. 770.

‡ *Med. Clinic*, vol. i. p. 212.

and often before the arrangements necessary for removal to hospital can be effected.

CASE I.—E—— S——, aged 27, born in Virginia (colored), a cartman of temperate and industrious habits, residing with his parents in comfortable circumstances, began to complain of illness, Feb. 14th, 1852, at eleven o'clock, A. M. He had first nausea, and in a short time a severe chill, with vomiting, when his employer advised him to go home, which he did. After reaching home, he complained of much pain located in the pit of the stomach, vomited some yellowish fluid several times, and said he felt weak. His mother gave him some ginger tea, and urged him to send for a physician, which he declined to do, till his employer should visit him in the evening. He continued to vomit and complain of pain in the stomach, with general debility. At four o'clock P. M. a dose of castor oil was administered, after which he did not vomit again. He continued, however, to complain of pain in the stomach, sank rapidly, and very unexpectedly died at ten o'clock on the same evening, before the arrival of a physician, and but eleven hours after the attack. On the morning of the day in question, he ate his breakfast as usual, and appeared to be in good health. A fortnight before this he had "a cold," of which, however, he got better. About two years previously, he had an attack of pleurisy. There was no suspicion that he had taken poison, nor of foul play of any sort. His intellect remained clear to the last. He exhibited no head symptoms.

Dissection fifteen hours after death.—Body strong and muscular, vigor mortis well marked. The stomach contained about one quart of yellowish fluid, having an oily substance (castor oil) mixed with it, and floating on its surface. Its mucous membrane was injected with blood, presenting a uniform reddish color, with some dark-colored stellate spots pretty evenly distributed over its surface. This membrane was also tumid or thickened by sero-sanguineous infiltration, and somewhat softened throughout its whole extent. It was every where covered with an abundant quantity of bloody mucus. We gathered nearly two ounces of this reddish-colored mucus with but little difficulty. The esophagus was normal. The duodenum presented morbid appearances, similar to the stomach, but the rest of the intestines exhibited nothing but venous congestion. The spleen was less than half the normal size (atrophied); its investing peritoneum had a grayish-white, semi-opaque, and corrugated appearance; its parenchyma was indurated, pale red in color, and presented

numerous whitish fibrous bands or threads, traversing it in every direction. The liver was bound to the diaphragm by some old adhesions, enlarged, and contained more than the normal quantity of blood (venous congestion), but in every other respect was healthy. The gall bladder was filled with normal bile. There were abundant old pleuritic adhesions on both sides of the thorax. Each lung contained more than the usual quantity of blood, but otherwise was healthy. The heart was hypertrophied, fatty, flabby, and exhibited some milk spots, formed by an organized layer of false membrane, which we peeled off with a little care. The edges of the mitral valve were somewhat thickened by interstitial deposit, and semi-cartilaginous in consistence, but the other valves were natural. The heart contained no coagula. The kidneys were congested (venous), but in other respects normal.

Did this patient die of acute gastritis? It seems to us that a rigid interpretation of the vital phenomena, and the morbid appearances exhibited on dissection, warrant no other than an affirmative answer.

Was this gastritis a result of corrosive or irritant poisoning? After careful inquiry, no evidence was discovered which would warrant even a reasonable suspicion that such was the case.

Admitting, then, that this was a case of acute idiopathic gastritis, several queries are naturally suggested.

Why did the vomiting cease at four o'clock, when the result showed that the inflammatory lesion was not arrested, but, on the contrary, was rapidly advancing to a fatal termination? The following seems to be a rational explanation: By extension of the inflammatory action beyond the mucous membrane, the muscular coat of the stomach became paralyzed at that time, and so profound an impression was also produced upon the whole nervous system, through the pneumogastric and sympathetic nerves, that the action of the voluntary muscles, which perform an important part in the act of vomiting, was no longer excited. This explanation also throws some light upon the difficulty often experienced of producing emesis in cases of corrosive poisoning;—we say some light, because the influence which poisons exert directly upon the nervous system, aside from inflammation of the tissues with which they are in contact, should not be overlooked.

What relation (if any) existed between the atrophy of the spleen and the gastritis? It is reasonable to believe that a gland like the spleen, capable, on account of its peculiar structure, of accommodat-

ing itself to the varying conditions, with regard to the quantity of blood in the portal vascular system, and intimately connected with the stomach, first by contiguity, and second, by a close relation of blood-vessels—it is reasonable to believe that such a gland, when, through atrophy, it is able to discharge its functions only imperfectly, or not at all, may exert a morbid influence upon the stomach. However, this question cannot be satisfactorily answered without further interrogation of nature; for accurate observations concerning the conditions of the stomach which accompany the various morbid states of the spleen, sufficient in number to warrant reliable inductions, have not yet been collected.

CASE II.—H——— G———, aged nineteen, healthy, except that he complained of palpitation of the heart and shortness of breath after any severe exertion, ate both a hearty breakfast and dinner on Sunday, May 9th, 1852, and appeared in every respect to be in usual health. In the afternoon, with his brother and a man employed at a stable in the neighborhood, he partook freely of rock candy (he ate about half a pound). Afterwards he drank a single glass of beer, and ran to a fire (the day was warm). About 4 o'clock he returned to the stable, and complained of sickness. He vomited a good deal and purged, got shortness of breath, groaned a good deal, complained of feeling cold and weak, rapidly lost his strength, and died about 5 P.M., or one hour after returning to the stable. Some water was given him to drink, but nothing else. The other persons who partook of the same candy and beer did not suffer at all. He was carried home dead.

Dissection 16 hours afterwards.—Rigor mortis very strong. The stomach contains eight or ten ounces of fluid, tinged greenish yellow, and mixed with a little food. Its mucous membrane, throughout, is reddened, thickened by sero-sanguineous infiltration, slightly softened and coated over with an abundant quantity of tenacious mucus. The gastric and mesenteric veins were full of blood. The small intestines exhibited venous congestion. The liver was considerably enlarged, and the spleen much enlarged. The lungs did not collapse on opening the thorax. They were large in volume, increased in weight, contain more than the normal quantity of blood, and exhibit an abundant quantity of pale serum, effused into the air-cells, the smaller air-passages; and the pulmonary tissue. In other respects they were normal. The heart was considerably enlarged (hypertrophy), rather fatty, and its apex was well rounded off. The mitral valve was

thickened, and exhibited whitish fibrous vegetation upon its margin, particularly that of the aortic segment. The tricuspid was abnormal in a similar manner, but in a much less degree. The aortic valves were thickened, and the valves of the pulmonary artery normal. The foramen ovale was partially open. The right side of the heart and the large veins were full of blood which every where was fluid.

This interesting case differs from the last in several important particulars, referring both to the symptoms exhibited during life, the rapidity with which death ensued, and the lesions found on dissection. Both of them had vomiting and great prostration of strength, but G—— had, in addition, rapidly increasing dyspnœa and speedy dissolution. In his case, the symptoms of gastritis were masked by those of an intense pulmonary congestion resulting from hypertrophy and valvular disease of the heart, by which life was extinguished much sooner than it would have been by gastritis alone. The partially open state of the foramen ovale was an interesting fact revealed by the dissection. The size of this opening was that of a crow quill, but its direction was so oblique as to permit scarcely any commingling of the blood in the auricles. With regard to the foramen ovale, it may be not uninteresting to state here that we have noted its condition in 34 cases, and that in 5 of them it was open to a greater or less extent.

CASE III.—M—— C——, aged 55, born in Ireland, living out at service, a hard drinker, came to her brother's house for rest. They were very poor people. On Thursday, February 26, 1852, she complained of sickness. She had entire loss of appetite, vomiting, chilliness, sleeplessness, wandering delirium, in which she talked principally of her deceased parents, and muscular tremors. These symptoms lasted till death, March 1st, 1852, at 7 P.M. The vomiting was an urgent symptom. She threw up every thing she took into the stomach. She drank no liquor after coming to her brother's. No physician was in attendance.

Dissection 18 hours after death.—Rigor mortis entirely absent. The quantity of fat in the cellular tissue generally is abundant. *Head.*—Skull thicker than normal. The arachnoid membrane exhibits more or less opacity through a considerable part of its extent, presenting a pearly appearance, but it is not thickened. The nervous tissue, particularly the cortical substance, is rather exsanguinated than otherwise. The sub-arachnoidean effusion of serum is more copious than natural at the vertex, but the ventricles are nearly

empty. The brain presented no other abnormality. *Chest.*—No pleuritic adhesions. Both lungs contain pigmentum nigrum in excess. Near the apex of the right lung we find a tuberculous concretion, as large as a pea, of a chalky consistence, situated a little beneath the pleura. About it, there is a scar-like puckering of the pleura, and the smaller bronchial twigs are somewhat dilated. The bronchiæ are reddened. External to the pericardium is an abundant deposit of fat. Beneath the pericardial investment of the heart is a layer of fat, which covers the muscular structure of the whole organ except a small part of the left ventricle. Near the apex this layer of fat has encroached so much upon the muscular wall of the right ventricle, as to reach nearly or quite down to the endocardium. The heart is also hypertrophied. The liver is enlarged, and exhibits the waxy variety of fatty degeneration. The gall bladder is full of dark green bile. The spleen is smaller than natural, and firmly glued to the diaphragm by old cellular adhesions. Its tissue is also indurated, anemic, and exhibits a pale red color on section. The stomach contains about six ozs. of fluid resembling coffee. Its mucous membrane is more or less reddened, thickened, softened, and coated over with glairy mucus throughout its whole extent. These changes are most marked towards the pyloric extremity of the organ. The intestines contain much greenish excrement. The mucous membrane of the esophagus presents a slate color, in streaks or patches running longitudinally. At these places it is thickened and indurated rather than softened (chronic catarrh). It presents no other abnormality.

This was not a pure case of gastritis. The deceased had delirium tremens associated with the inflammation of the stomach. It is also worthy of remark, that here we meet again with atrophy of the spleen.

CASE IV.—An unmarried woman aged 19, had complained of illness one week. On Tuesday, April 26th, in the morning she got much worse; she vomited and complained of heat at the epigastrium, with general prostration. The surface of her body was cool. About 7 P.M. on the same day she again became much worse. She vomited rapidly, lost her strength, and died in a short time without a struggle. She presented no head symptoms. She had no diarrhœa. Deceased attributed her illness in great part to getting her feet wet about the menstrual period, whereby the menstrual flow was prevented.

Dissection 21 hours after death.—Rigor mortis well marked. The stomach and intestines exhibit a reddish brown color when viewed externally and in situ. The stomach is distended with gas,

but nearly empty of solids and liquids. Its mucous membrane (particularly the folds) is more or less reddened, thickened, and somewhat softened. The mucous membrane of the small intestines is reddened, roughened, softened, and covered with an abundant quantity of bloody mucus.

The intestines are distended with gas. Right pleural cavity completely obliterated by firm old cellular adhesions. Each lung contains more than the normal quantity of blood. There is a milk spot on the anterior surface of the heart, circular in shape, about one inch in diameter, and considerably elevated above the surrounding surface. It consists of old, organized plastic exudation. Its surface is not smooth but stringy. The heart is rather fatty, the foramen ovale is partially open; in all other respects the heart is natural. The liver exhibits a formative abnormality. The great fissure is farther to the right than usual, and in consequence, the left and right lobes are nearly equal in size. The spleen is much enlarged, and its peritoneal covering readily peeled off. The kidneys contain more than the normal quantity of blood (venous congestion), which renders them dark-colored. The uterus exhibits ulceration about its os. This ulcerated surface is slightly depressed, apparently from loss of epithelium, and presents a reddish brown color. The vagina contains an abundant quantity of leucorrhœal discharge. The peritoneal covering of the fundus uteri is colored reddish brown by injection of blood, and the tissue of the body of the organ is flabby, softened, and partially broken down in the interior. The uterus was retroverted with flexion of the neck, the axis of its body pointing backwards and downwards.

The dissection of this subject exhibited metritis conjoined with inflammation of the gastro-intestinal mucous membrane.

CASE V.—There is reason to suspect that some poison was taken in the following case, for the purpose of producing abortion, probably one of the essential oils.

A widow, aged thirty-two, sent for a physician, March 26th, 1852, who found her complaining of great pain in the abdomen and thighs, but without vascular excitement. On the 27th, the pain was less severe. On the 28th, the belly was found to be tender under pressure; the pulse was 100, and feeble, and she had great prostration of strength. On the 29th, she was pulseless at the wrist; she had nausea, vomiting, and great oppression at the pit of the stomach; her countenance was anxious, and breathing hurried. She died on the afternoon of this day. She was treated very properly for perito-

nit. The fact that she had suffered a premature labor was carefully concealed from her physician, and he discovered it only by making a vaginal examination, his suspicions being roused; neither is it known when the labor occurred, nor whether it was produced by accident or design.

Dissection fifty-two hours after death.—Rigor mortis slight. The areolæ are enlarged, darkened in color, and their tubercles are increased in size, as in pregnancy. The lungs are somewhat congested, but in other respects natural. The right side of the heart is full of coagulated blood, nearly black in color. The organ is natural. The peritoneal cavity contains more than one quart of sero-purulent matter. The effusion occupying the pelvic portion is richest in pus. On the convex surface of the liver is a thin soft layer of grayish yellow false membrane. There is a considerable quantity of recent grayish yellow plastic exudation on the serous coat of the small intestines, in some places agglutinating them. This exudation is not so abundant about the large intestines. The uterus is about six inches in its long diameter, flaccid, and contains some decomposing bloody fluid. The mark of the placental attachment occupies the posterior portion of the body of the organ; this mark is about three and a half inches in diameter. The os and cervix uteri are gangrenous, that is, black in color, softened in consistence, and emitting a very fetid smell. A little pus was found in the uterine sinuses, near the left ovary, on cutting into them, but at no other point, though careful search was made. The parenchyma of the liver and spleen is softened, but presents no other abnormality. The coats of the stomach are *much* thickened by *sero-sanguineous* infiltration. The mucous membrane is tumid, reddish brown in color, and softened throughout; the thickening of the coats, the darkening in color, and softening in consistence, are most marked at the fundus. The organ contained a few ounces of dark greenish-colored fluid, but was not contracted.

In this dissection, we see acute inflammation of the stomach conjoined with metro-peritonitis.

ART. VII.—*Memoir on Nicotine*, by M. ORFILA. Translated from the French, by CHARLES A. LEE, M. D. *With notes.*

(Continued from page 124 of present vol.)

Medico-Legal Question with regard to Nicotine. Case of Bocarmé, tried at Mons, June 15th, 1851.

EVERY one remembers the astonishing excitement produced by the accusation brought against the Count and Countess Bocarmé; the elevated standing of the prisoners; the rapid death of Gustavus Fougnyes, the brother of the Countess, after the poisoning by nicotine; the mercenary design exposed by the public prosecutor, as the motive of the poisoning; the fact of the preparation of the nicotine by the count, and many other circumstances related in the act of accusation, assign this a place among the most important in judicial annals.

Act of Accusation.

The Attorney General of the Court of Appeals of Brussels represents that the court, by a decree of the 16th April, 1851, transmitted to the Court of Assizes of the province of Hainaut the names, first, of Alfred Julien-Gabriel-Gerard-Hyppolyté Visart, Count Boearmé, aged thirty-two years, landholder; born at the Camp of Weltevredern, in Java, &c.; second, of Lydia-Victoire-Joseph Fougnyes, aged 32 years, wife of the Count Bocarmé; born at Péruwelz, and having lived for the last two years at Bury, accused of the crimes enumerated in the articles 301, 302, 59, and 60, of the Penal Code.

In consequence, the Attorney-General set forth the present act of accusation, in which the following facts and details are related:

The Count Hyppolyte Visart de Boearmé, belonging by birth to one of the first families of Hainaut, married, in 1843, at Péruwelz, the daughter of an old grocer, who had two children; and whose son, having lost his right leg by amputation, possessed a very feeble constitution. The accused, therefore, even before the contract of marriage, foresaw the end of Gustavus Fougnyes, his brother-in-law, more or less near; and after he had, somewhat tardily, secured the property of his wife by will, he did not hesitate to consult Dr. Semet regarding the chances of life or death which Gustavus might have.

But Gustavus also began to think of marriage. He had already entertained the idea, in 1846, and he was on the point of carrying it

into execution, in the month of last November, when he died suddenly at the mansion of Bitremont, where the prisoners resided, and even in the apartment where he had come to dine with them. They communicated the intelligence the next day to Madame Dudzele and her daughter, to whom Gustavus was about to be married; and the Countess even charged a servant to "go and tell the two prostitutes that her brother had died of apoplexy." But the state of the body indicated a very different kind of death, since the autopsy exposed upon the anterior part of the nose a deep contusion; upon the left cheek a number of scratches, which appeared to have been made by the finger-nails; over the left maxillary region there was a corrosion penetrating the cuticle, and which seemed to have been caused by some caustic fluid; in fine, upon the tongue, in the mouth, fauces, and stomach, there were numerous traces of the passage of a similar substance.

The physicians (experts) concluded, from these observations, that a corrosive liquid had been poured, during life, into the mouth of Gustavus Fougnes, and had produced a cauterization of the whole of that cavity, and part of the pharynx; that a portion of the liquid, either spilt or rejected, had burned the left side of his neck; and that the marks of violence on the face proved that efforts had been made to force down the liquid, and to stifle the cries of the victim.

On the other side, the Count presented upon the second phalanx of the middle finger of the left hand, a double wound, which penetrated the skin, and which was evidently the result of a bite, since the two lower teeth had penetrated more deeply than the upper.

At the time the investigation took place, on the 22d November, at the chateau of Bitremont, there was also apparent upon the fingers and under the nails a red discoloration, which was too evidently connected with the scratches, of which the face of Fougnes offered numerous traces. All this required an explanation, which was far from being satisfactory; and chemical analysis was not slow in demonstrating that Gustavus Fougnes had been poisoned by nicotine, an organic alkali, extracted from tobacco, and which is one of the most deadly poisons. The indictment also showed that the accused had, for ten months previously, made this poison a particular study; that he had, some days before the death of Gustavus, procured by his labors two small phials of it, which had not been found since the event. Although the Countess herself formally accused her husband of having poisoned her brother; and although the Count himself acknowledged at the time that he had extracted the nicotine

which had destroyed Gustavus, without, however, explaining by whose means it had been administered, we think it may be useful to present a summary of the facts which instigated, preceded, accompanied, and followed the crime of the 20th November.

In espousing Lydia Fougnyes, whose patrimony he had over estimated, the Count Bocarmé was far from gaining, for the time being, an opulent position; since he only received from his father-in-law a yearly allowance of 2,000 francs, and he brought, on his side, 2,400.

Such feeble resources did not well accord with a grand domestic establishment, with numerous domestics, and especially with the irregularities of the accused, who, in a short time, had a second household in the environs of Brussels. He thus finds himself obliged to resort to daily loans from his notary, to whom he already owed nearly 43,000 francs of principal; and although M. Fougnyes, the father, died in 1845, leaving his daughter a revenue of 5,000 francs, well secured, this increase of fortune was far from assuring the future of the accused, since their expenses were every day increasing; and they had even drawn, since 1846, without repayment, to the amount of 84,000 francs.

All this did not prevent them from owing dribbling debts to the amount of 7,000 francs, some of which dated back to the same epoch; and in which we see figure domestics, or honest journeymen, for sums of 30, 12, 10, or 3 francs. In fine, they had so completely lost their credit, that the Count was seen to pledge for 400 francs, at a pawnbroker's in Brussels, a dress, which was found there again, and which belonged to the Countess. The ruin of the accused was thus imminent, unless the death of Gustavus, on which they had so long counted, should not soon occur to re-establish a fortune so dilapidated.

But Gustavus would not die; he had even formed, since the month of July, new projects of marriage, which the accused violently opposed, and which they sought to break through the mediation of the notary, Cherquefosse. The Countess herself had written to her brother two letters, which were found after his death, and which contained the same slanders against Miss Dadzele, which she had used in an anonymous letter of the month of August. These attempts, however, had resulted in nothing, and there remained to the Count but the last resort, and the most efficient means for attaining his end.

After having cultivated poisonous plants in 1849, he presented himself in the month of February 1850, under the false name of Be-

rant, before Loppens, Professor of Chemistry at the Industrial School of Gaud, and requested of him the proper apparatus for extracting the essential oil of vegetables, remarking that he had seen the American savages poison their arrows with the juice of certain plants, and that he wished to make some experiments for the benefit of his parents, who lived in the United States. He consulted Loppens, particularly, with regard to the mode of distilling the essential oil of tobacco, that is to say, of *nicotine*; and he had ordered from the brazier, Van den Bergh, according to the instructions of the professor of Chemistry, an apparatus of brass, which he wished to be ready by the 11th of March.

On his return to Gaud in the month of May, the accused showed Loppens the first sample of nicotine, which had not proved efficient. He then recommenced the operation under his eyes, and after having labored two days in his laboratory, he succeeded in obtaining two drops of pure *nicotine*. He returned again after some time, with another sample which had not succeeded any better than the first. Loppens then gave him new instructions, and the accused announced to him at last, on his third visit, in the beginning of October, that he had obtained the most deadly effects on animals.

Nothing now remained but to procure the necessary substances and instruments to operate on a larger scale, and to follow the procedure of Schlössing, which Loppens had pointed out as the best, and which Pelouze and Fremy describe in their course of General Chemistry.

But these purchases made new journeys to Brussels necessary, which the accused visited on the 16th and 28th of October, and after laboring without interruption ten days and two nights, he at length succeeded, on the 10th of November, in obtaining the two phials of nicotine, which he employed on the 20th, and which could not be found after the death of Gustavus. With regard to the chemical instruments which had served for its preparation, the Count had taken care that they should immediately disappear. The servants of the establishment could give no information with regard to them, and it was not till six months after, that they were discovered in a secret place where the Count had mysteriously concealed them.

This precaution, all will agree, does not well accord with scientific labors, or with researches made for the benefit of another continent.

There is, moreover, the false name of *Berant*, which the Count always assumed, in his interviews with Loppens and Van den Bergh, although he did not conceal his true name at the pawnbroker's shop

in Brussels. We may then safely conclude that he had already in the month of February meditated the crime which he committed in the month of November, and of which his own mother would seem to have had a presentiment, since she said one day to her daughter-in-law, that Hyppolyte was capable of any thing, that he would do some mischief by his chemistry, and that she expected nothing else but to see him some day brought before the Court of Assizes. The diligence with which he labored night and day, moreover, clearly indicated the object he had in view, especially at the period when the idea of marriage had taken possession of Gustavus, and the Countess herself had avowed the object, since she said, in so many words, in reply to one of her interrogations, "My husband meditated the death of Gustavus; it was his fortune that he coveted, it was that which made him decide upon his death; he had lived too long in his estimation. During the first days of November, I know that the poison was prepared for Gustavus; I knew, moreover, that the poison was nicotine. My husband himself told me this in the rear wash-house, the day I saw the large mattress in the vessel of oil, and where he told me he made cologne-water. I used many entreaties to know what he was really proposing, and he finished by avowing that it was nicotine. Some days after, he told me that the first time an opportunity presented, he would not miss Gustavus; and on the 20th of November, on learning that he was coming to Bitremont, he declared to me," added the Countess, "that he would do the business for him that day."

Gustavus, in fact, arrived at 10 o'clock; it only required a single word to save him, and yet the Countess travelled the whole distance with him, without informing him of the dangers which impended. She even gave orders which would insure the execution of the crime, by removing those whose habitual presence would have prevented it. Thus, she made the oldest of the children, and his teacher, dine in the room of the latter, instead of admitting them to the table where they dined every day; and she had caused supper to be prepared for the two smaller children in the apartment of the nurse, instead of in the kitchen, as was their usual custom.

It is true that one can hear from the kitchen what passes in the dining-room. It is also true that he had sent his coachman, Van den Bergh, to Grandnutz, with a letter to the woman Dudzeele, although he had, by the arrival of Gustavus, a horse to take care of, and although the letter had no other object except to inquire of the females what price they would ask for their agricultural implements. There

was no urgency in the message, but the distance to travel over took the coachman four or five hours to accomplish; and when afterwards the Countess ordered her chambermaid, Emerance Bricourt, to serve at table, instead of Van den Bergh, she was careful to order her to withdraw after the second service. Emerance did not appear again in the dining-room until the time when she supposed they would need a light, and the accused, to whom she came to offer it, answered, both at the same time, "*No, no, not yet.*"

On withdrawing, Emerance was going to the kitchen, where the coachman was dining, who had returned from his trip to Grandnutz. The Countess followed her, and made her go up to the nursery, where she found the two nurses, Justine Thibaut and Virginia Chevalier. She had also ordered Van den Bergh to accompany, on the route from Leuze, a distance of about one kilometer,* the cook, Louisa Naes, who would return with him. Van den Bergh was thus sent back on the road for Louisa, but he was not long in perceiving that he would be too late; and as the girl could travel as well alone as with him, and as he had no money to pay for his lodging on the way, he had returned to the house, and informed his master and mistress, who were then in the dining-room with Fougnyes.

Gustavus had already manifested an inclination to leave. The Count had even ordered Francis de Bliequy, the gardener, to get the carriage ready, but the stable was locked and Van den Bergh had the key. He had scarcely returned to the house, when the Count went to the kitchen to give the same orders which he had given to Bliequy. The coachman then took his lantern and went to the stable, and the Count returned to the dining-room.

Justine Thibaut was coming down stairs at this moment to get supper for the children, although the Countess had ordered them away from the kitchen, on this occasion, as already stated. Arriving upon the last steps of the stairs, she heard a fall in the dining-room, and the voice of Gustavus, who cried for help, exclaiming, "*Oh, oh, forgive me, Hippolyte.*"

She then ran to the kitchen, passing the office which separated the porch from the dining-room, when she saw the Countess go out of the dining-room and enter the office, closing the doors of the two apartments, so as to prevent the cries of Gustavus from reaching the kitchen. The girl being still more frightened at this sight, she hastened to reach the court by a private passage; she then passed

* A distance nearly equal to three-quarters of an English mile.

opposite the windows of the dining-room, from whence issued stifled cries, and she ascended to the children's apartment by an old back stairway. Emerance, whom she found there, then descended to offer her services, but she heard no more noise, and the Countess made her go up again, on seeing her at the bottom of the stairs.

The marks of violence observed upon the body, will exclude the idea of accident or of suicide. They prove, on the contrary, a violent struggle, and when we reflect, that to make the poison take effect upon the victim, it was necessary, at the same time, to open the mouth and restrain the movements of the head to the right and left, which it would otherwise make, it is nearly impossible to admit, that the crime was the act of one person only.

In fine, how can we conceive, that the Count Bocarmé, whose left hand imprinted with a double grip, was held in the mouth of Gustavus, and whose right hand was fully employed in steadying the head and arms, could of himself, and without foreign aid, turn down the mouth a phial of nicotine ?

Another person was, therefore, necessarily a participator in the act, and there were only the Count and Countess in the dining-room at the moment when Justine heard the fall and the cries of Gustavus. The accused wrote, as follows, on the 12th of last March, to a correspondent in Paris:—"My wife has requested you to engage M. Berryer; do not do it; and if the engagement is made, suspend it until a new order is received from me, but let her continue in the belief that he is engaged. On this recommendation both her life and mine depend. You can imagine that this wretched woman, after having poisoned her brother, can find no better defence now, when we are both in prison for the crime, than to charge the whole upon me, and to utter against me the most atrocious calumnies. Do not answer this note which I secretly slip into the accompanying letter. Remember that all the letters we receive, are opened. When Berryer shall have engaged to come, explain to him what I have stated to you in this note; show him that the hostile attitude assumed towards me by my wife, is only the result of a moral constraint occasioned by the position in which she finds herself placed, and that his aim should be to defend us both equally against the accusation, and not to take up for my wife in the hostile position she has assumed in regard to me; this would give great plausibility to the charge, and lead us inevitably to the scaffold."

This note, which the accused had fraudulently slipped into an open letter, was not intended for the Judge of Instruction. It expressed

then the secret thoughts of Count Bocarmé, better than they were ever explained in his interrogations; and those thoughts entirely agree with the nature of the crime of which he is accused; it also well agrees with the confidence the prisoner had reposed in the keeper of the prison, since he told him on returning from his first examination, that it was the Countess who had turned the poison into the mouth of Gustavus; that she had made two different attempts in doing it, and had even spilt it on the clothes of her brother.

This explains why she went, a few minutes afterwards, to wash her hands with soap in the kitchen; why she immediately placed the clothes of Gustavus and those of her husband in a copper kettle full of water; and why she caused them to be rubbed and washed in ley, at night, in her presence, by the cook, L. Naes. This also will explain why she caused the crutches of her brother to be washed with hot water; why she even caused them to be burned, saying she could not bear the sight of any thing that had belonged to him; why she had burned his under-waistcoat and cravat at the very moment the justice arrived at Bitremont. This will also serve to explain why she caused the floor of the dining-room to be washed the same evening, and in her presence; why the next day she herself turned oil upon the spots, that they might not be recognized; and why she said, with evident satisfaction, to Emerance, at the time they were making the autopsy, that every thing went on well, and that they had discovered nothing, and would bury Gustavus on the morrow.

These facts are too numerous and too direct for any one to doubt of her being an accomplice, especially when placed in connection with the extrajudicial declarations of her husband, with the special character of the crime, and with the measures the Countess had taken to insure their execution.

This complicity dated as far back even as the time when she had written and signed with the false name of *Beraut*, all the letters addressed to Loppens and the brazier Van den Bergh; and she had even counterfeited his handwriting in several of these letters.

The Countess pretended, it is true, that if she passed the night in causing the traces of the crime to disappear, it was only to save her husband, and the father of her children. But it is very difficult to admit this excuse in regard to so odious a crime, and one too committed against her own brother.

Especially is it difficult to admit it, in presence of almost daily acts of violence, of which the Countess had complained, and to which her husband added the grossest immorality; since we have seen that

he obliged her to receive the fruit of his adultery at the seat of Bitremont.

She also maintained, that if she had concurred in preparing for, or aiding the poisoning, she had only done it under the threats of her husband, and under the influence of moral constraint. But then why did she not, at least, apprise her brother, when a single word might have saved him? Why did she profane his dead body by ordering the coachman Van den Bergh to deluge it with vinegar? Why attach a disgraceful epithet to the ladies, Dudzele, when she directed a servant to inform them of the death of Gustavus? All this denotes too clearly a common purpose, to attain the same object, which might profit both the accused, and which even the uncle of the Countess openly proclaimed in his deposition, explaining the reasons why he had not been present at the house, the next day, in compliance with the invitation he had received. "I was," he said, "too indignant against them for their infamous conduct, and this indignation had its foundation in the deep conviction that they had murdered Gustavus."

In conclusion, Alfred-Gabriel-Gerard-Hippolyte Visart, Count Bocarmé, and Lydia-Victoire Joseph Fougnyes, wife of Bocarmé, are charged with having voluntarily made an attempt upon the life of Gustavus Fougnyes, their brother and brother-in-law, at Bury, on the 20th November 1850, by substances which would cause death more or less promptly, or by means which would render them accomplices in the act, whether they gave instructions to commit it, or procured the substance, or did any other act to carry it into execution, knowing the object intended; whether they knowingly aided or assisted the author or authors in those arts which prepared for, or facilitated the acid, or in those which consummated it.

Regarding which the Court of Assizes of Hainaut will decide.

For the Procureur-Général,

Signed

E. D. CORBISIER,

May 3d, 1851.

Substitute.

The discussions respecting this case occupied the Court during twenty-one sittings (from 27th May to the 15th June). M. Bocarmé was found guilty by the jury, and condemned to death, and Madame Bocarmé was acquitted.

Symptoms experienced by Gustavus Fougnyes.—These cannot be accurately known, inasmuch as the death occurred in the dining-room of the house at Bitremont, and no particulars ascertained but these. Gustavus died in about five minutes, after poisoning by an unknown

dose of nicotine; he made outcries, but were they before or during the poisoning?

Report of the autopsy of Fougnyes, by Doctors MAROUZÉ, ZOUDE, and GOSSE.—On the 22d of November, 1850, upon a requisition from M. C. Heughébaud, Judge of Instruction of the Court of Tournay, we, the undersigned, certify that we repaired to the house of Count Bocarmé to examine the body of Gustavus Fougnyes of Peruwelz, and to state the cause of the death of the young man.

After accepting the mission, which had been offered us, and been sworn to discharge the duty as men of honor and integrity, Count Bocarmé conducted us to the room where the dead body was deposited; which we caused to be removed to a convenient place, when we proceeded to the autopsy, which gave the following results:—

Examination of the exterior of the body.—The body, which was recognized by several persons present to be that of Gustavus Fougnyes of Peruwelz, appeared to be that of a man, about thirty years of age, of a feeble organization, and having but one leg (the left). We observed as follows: 1st. Upon the left cheek, numerous prints of a semilunar shape, with their concavity towards the mouth, and their convexity outwards; in a word, these marks had the form of the print of a nail. 2d. Immediately under the left maxillary region, a corrosion, penetrating the epidermis, which was moreover elevated and detached to the extent of about eight lines; all around the cuticle was removed by the slightest friction; indeed over the whole surface which occupied the whole left submaxillary region, and a portion of the superior cervical region of the same side; thus corrosion appeared to have been made by some caustic liquid. 3d. A deep contusion was seated on the anterior part of the nose; dissection of this contusion displayed a very considerable sanguineous infiltration; in the centre of this contusion was a small wound of the size of a hemp-seed. 4th. Three small scratches situated on a level with the lower jaw on the right side, and only penetrating the cuticle. 5th. A trace of blood chiefly sero-sanguinolent, and little colored, about an inch in extent, situated on a level with the articulation of the third right rib with the sternum; this red serosity, moreover, seemed to have been caused by the burning rather than the contused wound. 6th. The cicatrization of the amputated stump was perfectly healed, and not swart at any point.

Examination of the interior of the body.—The mouth.—The lips were pale and shrivelled, and covered with a brownish gray crust, and similar crusts filled up the dental interstices. The tongue was large

nearly twice its natural size; its mucous membrane was of a grayish black, and destroyed through the whole extent of its upper surface and along its edges; the slightest touch with the back of the scalpel raised it in small shreds, having little consistence. That portion of mucous membrane covering the lower surface of the tongue, was red and injected. The whole remaining portion of the mucous membrane of the mouth was red, cauterized, and detached with the greatest ease. The mucous membrane of the palate was of a grayish white, cauterized like the other, and readily detached by slightly touching it with the back of the scalpel; and the same was the case with the whole mucous membrane of the fauces. A large quantity of a glairy liquid was found in the mouth. The tonsils were enlarged, especially the left; they had lost their normal consistence, and were divided with the greatest ease. The mucous membrane of the upper part of the pharynx was red and injected; its epidermis easily detached; at its narrow and inferior portion it was red, but entire, and the same was true of the esophagus.

Stomach.—This was red and injected; some blackish patches of injection were noticed, but no ulceration nor perforation; it contained a considerable quantity of food, like pap, of whitish gray color.

The lungs.—These were sound, only they were somewhat more gorged with blood than natural, especially the right one.

The head.—No marks of disease; not even a trace of cerebral congestion.

All the other organs, as the liver, the spleen, kidneys, pancreas, etc., were healthy, and offered nothing worthy of mention.

Conclusions.—From the preceding observations we concluded, 1st. That some corrosive substance had been introduced into the mouth of M. Fournies. 2d. That this substance was a liquid, is evident from the fact that there was uniform cauterization of the buccal cavity, and especially of the upper surface of the tongue. 3d. That in introducing it into the mouth, or from its ejection from it, this liquid cauterized the left side of the neck. 4th. That the same liquid cauterized the mouth, fauces, and part of the pharynx, in passing over these parts. 5th. That we cannot determine the nature of this fluid, which must be left for Chemistry to seek to discover. 6th. That this fluid had been injected during life, is evident from the large surface upon which it had acted, without regarding the well-marked line of demarcation, or the nature of the lesions it had caused. 7th. That this liquid had been injected after the last meal taken by M. Fournies, for this organ could not have performed its function in this

state. 8th. That M. Fougnyes had not died a natural but a violent death, is shown by the absence of important lesions in the vital organs. 9th. That his death was owing to the continuance and severity of the horrible sufferings produced by the cauterization of the mouth and fauces, and to the violent anginae, with swelling of the tonsils, and probably spasmodic contraction of the larynx; and chiefly, in fine, to the efforts made to prevent the outcries of the victim, after the pouring of the liquid into his mouth, as shown by the marks of finger-nails upon the left cheek, the position of the nail-prints, and state of the respiratory organs.* 10th. That the deep contusion on the anterior and lower part of the nose, had been made by some blunt instrument.

Believing which, we have drawn the present report, which we sign with sincerity and truth.

Signed

MAROUZE, ZOUDE and GOSSE.

Peruwelz, November 27th, 1850.

It is important to compare this description of the state of the organs, with that which has been given by M. Stas; one will be struck with the differences which exist between them. (*See Tongue, Stomach*, p. 180 and 190.)

* The conclusions of the experts, Drs. Marouze, Zoude and Gosse, are all legitimate and cautiously drawn, with the exception of the 9th. It was well known that M. Fougnyes had died within five minutes from some cause, it is equally obvious that the local injury of the mouth, fauces, &c., could not have produced death within that time. There were no decided marks of strangulation present; and as he did not die of apoplexy, or disease of the heart, it would have been inferred that the death was owing to some caustic poison, possessing great power (sedative or narcotic), for it is obvious that no mere irritant or caustic substance could destroy life so speedily. Nor is there any known narcotic, unless it be the alkaloid of aconite, tobacco, lobelia, conium, and perhaps a few others, not to name strychnia, which cannot be called a narcotic. Now, of these, but very few possess any powerfully acrid properties, such as tobacco, lobelia, and conia, which, in fact, are the only fluid alkaloids, and therefore only fitted to produce all the effects noticed in this case. Reasoning thus by exclusion, these experts, it would seem, might have arrived at a safer conclusion than that death was caused by the sufferings produced by a caustic, and the slight swelling of the tonsils, and probable spasmodic contraction of the larynx, &c.,—or to the efforts made to prevent the cries of the victim, as the usual signs of suffocation were absent. At any rate, the case may serve to show the necessity of great caution in drawing our conclusions with respect to the cause of death in such cases; as the ablest medical jurists may err, as happened in the present instance.—TR.

Medico-legal researches.—It would be difficult to convey an idea of the numerous and delicate experiments performed by M. Stas, to resolve the questions submitted to him. I shall only mention those which resulted in the discovery of the nicotine, passing in silence a mass of researches relative to the spots of blood, &c. M. Stas detected nicotine on the tongue, in the alcoholic liquid employed to preserve this organ, the jaw, fauces, and the larynx, in the fluids found in the stomach, in this viscus, in the liver and lungs, on an old pantaloons worn by Francis Blicquy, the workman who aided Bocarmé in preparing the nicotine; in fine, on some planks of wood forming part of the entry of the dining-room, where G. Fougnyes had been poisoned. In pointing out the steps which were followed in detecting the nicotine in the organs of Fougnyes, in the stomach, for example, I shall dispense with describing the other analysis, the processes employed by M. Stas being in all cases nearly the same.

An attempt has been made to lessen the merit of M. Stas, by saying that he had been placed on the right track by the Judge of Instruction, who had informed him that Bocarmé had been experimenting with tobacco and nicotine. How can we believe, says one, that the Judge of Instruction, who knew all this perfectly, and who was in daily communication with M. Stas, had kept perfect silence with regard to it for ten days? As for myself, who have no reason whatever to suspect the veracity of M. Stas, I may say that I was informed by him, that when he received this precious hint, he had already ascertained that the poison introduced into the stomach of M. Fougnyes, was neither sulphuric nor acetic acid, although he had been led to believe for several days that it was acetic acid; he had even arrived at the conclusion, that Fougnyes had either swallowed *nicotine* or *conicine*.*

Examination of the tongue, lower jaw, fauces, and larynx.—The tongue was very large and swollen. The mucous membrane on its upper surface presented at the right, from the end, as far as two-thirds of the floating portion, a black or bluish appearance; the rest

* It is exceedingly gratifying to notice this generous defence of M. Stas by Orfila, both distinguished analytic chemists and medical jurists, and the example may be held up as worthy of imitation to scientific men in our own country; who too often, from jealousy or some other ignoble and unworthy motive, are ready to detract from the reputation of a rival, instead of defending it. But true science abhors such selfishness; is noble and generous; ever ready to hail as a friend and brother all who labor to advance its interests, or contribute to its progress.

of the membrane was a blackish gray; on the left, the tongue bore the print of two teeth; in this part blood had been extravasated. We observed, also, some cuts made by a pointed and cutting instrument. The mucous membrane of the lower surface of the tongue was red, injected, and covered with a very viscid liquid, of a yellowish white color; both on the upper and under side, this membrane was much softened; the epithelium was detached with the greatest ease; the substance of the tongue was also much softened, except in the central part, where it preserved its normal consistence.

The state of the teeth would not allow us to suppose that they had been in contact with a concentrated mineral acid.

Chemical examination of the tongue.—It exhaled a decided odor of acetic acid; the fauces and larynx exhaled the same odor; the tongue reddened litmus paper. Distilled water was made to flow for six hours over every part of it. The filtrated liquid was slightly troubled by lime and baryta water, and that of the chloride of barium; this turbidity disappeared in hydrochloric acid. Sulphohydric acid removed from it the rosy tint which it had, and made it opaline without precipitation; nitrate of silver caused a slight precipitate of a yellowish white, which disappeared, in part, in ammonia, and was increased by the addition of nitric acid; the portion not dissolved by the ammonia was flocculent, translucent, and resembled coagulated albumen. This liquid was, in part, introduced into a distilling apparatus, and the mattress plunged into a bath of salt water, when there came over into the receiver a colorless liquid, slightly acid; there remained in the retort a slight residue of a pale yellow, very acid, having the odor of viands. The rest of the liquid was distilled in the same retort, and the product was designated under the name of *the residue of the evaporation of the waters used for washing the tongue*.

The tongue was then cut into fragments (that side which seemed the most affected). These fragments were introduced into a retort, with a certain quantity of distilled water, and heated as we shall describe. The liquid which first came over was again introduced into a retort and heated; the second distillation, added to a certain quantity of water, was again distilled on the matters which remained in the retort; during six distillations it disengaged a very sensible odor of vinegar. The liquid obtained in the receiver, which was very acid, as well as the waters from washing the retort, were again subjected to a third distillation in a bath of salt water. This operation, which continued during three days, furnished in the re-

ceiver a liquid slightly acid, colorless, having the odor of vinegar, and a dry yellowish residuum, with the odor of roasted meat, which was marked *residue of the decoctions of the tissue of the tongue*. The acid liquid was made alkaline by baryta water. No doubt, says M. Stas, after having studied the salt which was formed, that this salt is the acetate of barytes, and that the acid which is volatilized by the distillations above-mentioned, is acetic acid. No doubt, also, that the tongue and fauces contained a notable quantity of this acid.

Examination of the liquids contained in the stomach, the intestines, and the bladder.—These different matters have been preserved in pure alcohol.

At the bottom of the vessel which contained these organs was a soft pulpy mass of a grayish black, in which were observed the debris of meat, of carrots, chicory, &c., partly digested; this mass, very acid, exhaled a tainted odor. It was divided into two equal parts, A and B. The portion A was resumed for further experiments, if any one should find fault with the report. B was mixed with the waters of the washings of the stomach and filtered; the liquid, seen by reflection, was green, and a dirty red, if seen by refraction; it deeply reddened litmus; it became opaline by sulpho-hydric acid, and left a gray flocculent deposit, insoluble in ammonia and nitric acid; the sulpho-hydrate of ammonia acted nearly the same; the water of baryta rendered it turbid, and the precipitate almost entirely dissolved in acetic acid.

It was sought to determine whether this liquid contained a volatile acid; to this end it was distilled in an apparatus without lute or a stopple, at about 100 degrees (cent.); it coagulated and was discolored. The distilled liquid was colorless, of a putrid odor, slightly alcoholic, and acid. When the liquid in the retort ceased to boil in a water-bath of a hundred degrees (centigrade), it was placed in a water-bath saturated with common salt; the retort was kept in it during fifty-two hours; by this means the liquid was reduced to two-thirds its volume; it was then heated over a naked fire; as the liquid was gradually concentrated in the same degree, it became more and more discolored; the matters in solution appeared, moreover, to change; and an enormous quantity of froth was generated. A part of the liquid was removed from the retort, in order to ascertain if the contents of the stomach did not contain some mineral substance, or some organic matter of a poisonous nature capable of change by the prolonged application of heat.

The portion of liquid taken was evaporated in a glass to the consistence of a syrup, which was brown, very acid, and having the smell of wine vinegar; heated by concentrated alcohol, it partly dissolved; the alcoholic solution, filtrated, was evaporated to dryness; the product diluted with cold concentrated nitric acid gave in about fifteen minutes a trace of yellowish matter, having a resinous appearance.

Another part of this liquid was treated with alcohol and evaporated; the product, when cold, was dissolved in a mixture of three parts of nitric acid and one of sulphuric acid, without discoloration.

Another portion became a deep brown by concentrated sulphuric acid, and exhaled the odor of vinegar.

Another portion, left for twenty-four hours in contact with sulphohydric acid, deposited a grayish flocculent precipitate, while the supernatant liquid was opaline and orange.

Another portion was discolored with the disengagement of sulphohydric acid, by sulphohydrate of ammonia, and deposited sulphur.

Water of barytes caused, with one part of this liquid, a turbidity which disappeared with hydrochloric acid.

Nitrate of silver formed with this liquid a sort of yellowish caseous mass, almost entirely soluble in nitric acid; the involatile portion was dissolved in ammonia.

With potash, the liquid became brown, and disengaged an animal and vegetable narcotic odor at the same time. What is the cause of this latter odor?

A sufficient quantity of the liquid was mixed with twice its volume of anhydrous alcohol; at the end of twenty-four hours there was deposited a small quantity of a glutinous mass; this was decanted and evaporated to the extent of three-fourths, without boiling; the product, added to a concentrated solution of caustic potash, was colored deeply brown; the mixture exhaled an ammoniacal narcotic odor, which suggested that of conium, or perhaps still more that of the urine of mice, although the animal odor predominated.

The liquids of the two experiments were reunited in a small vessel, with an emery mouth, and agitated with pure ether. After sufficient rest, part of the ether was decanted into a small glass capsule, and spontaneously evaporated; this left also all round the capsule a very slight liquid ring, colorless, of an animal odor, which afterwards became sharp, very disagreeable, adhering strongly to the throat, and coloring of a deep blue, litmus paper reddened. Taken

up by a new portion of ether, it was left to evaporate spontaneously, when was obtained a small oily ring, colorless, which after a few minutes gave striæ, which gathered at the base of the vessel; the odor of the liquid was very sharp and disagrecable; it produced on the tongue a sensation of burning, which remained a long time, and which extended over the whole mouth, the pharynx, and even the esophagus; it changed to a deep blue reddened litmus paper; it was very soluble in water, and the solution transparent and odorous, changed litmus to blue. We sought to know if these reactions were not owing to ammonia. To this end a reddened litmus paper was dipped in a watery solution of this substance, and also of ammonia; the papers were heated to 150 degrees (cent.); at the end of a minute, the paper made blue by ammonia was restored red, while the other preserved its blue color for about fifteen minutes; at the end of that time, the blue discoloration disappeared in its turn.

The other portion of ether remaining in the flask was decanted into a show glass and left to spontaneous evaporation; the slight ring which had formed was heated by dilute nitric acid, which dissolved it without discoloration, and it remained without color at the end of 30 minutes. Two drops of the same foaming acid changed it immediately to a yellow color. Water acidulated with a thousandth part of sulphuric acid, heated to 100 degrees (cent.) was neutralized by the matter of this ring; the liquor was colorless, neutral to litmus, slightly odorous, like the matter evaporated *in vacuo*, it left a colorless syrup, which would not crystallize; being decomposed by caustic potash and heated by ether, the syrup furnished a solution made volatile by ether; the residue was the same alkaline oily matter, whose taste was so very acrid, burning and persistent, calling to mind that of tobacco, or still more, that of the liquid which is produced by the condensation of the fumes of tobacco when smoked in a pipe*. The discovery of this alkali made it necessary to abandon, for the time, the estimate of the acetic acid contained in the stomach.

The rest of the liquor contained in the retort, and forming about four-fifths of the residue of the distillation of half of the contents of the stomach, was introduced into a flagon with an emery mouth, and neutralized by pure caustic potash, which rendered it alkaline; it

* The matter here spoken of, says M. Stas, is that which I made Francis Blicquy smell, and which this witness took for Cologne water (the name given by Bocarmé to nicotine), which the Count had prepared in his presence and with his assistance.

disengaged an odor, at the same time, animal, ammoniacal, and vegeto-narcotic (vireuse). The alkaline liquor was mixed with a part of its volume of ether, and briskly agitated. Abandoned to rest for half an hour, there was no trace of supernatant ether; a new quantity of ether was added, the matter took on the form of a gelatinous mass. A new addition of potash did not cause the formation of two layers; to obtain these, it was necessary to add a portion of water. The difficulty of separating the ether shows, that all the animal matters which were held in solution, had not been precipitated previously by the anhydrous alcohol; indeed, the same difficulty was not experienced, when in using this alcohol it was employed for a longer time. The ether once separated, the matter was exhausted by new quantities of ether (repeated six times), it was then evaporated in vacuo, by the side of a capsule, containing sulphuric acid. Here M. Stas describes with great care the ingenious arrangement of the apparatus which enabled him to collect the ether, and to obtain, at the end of the operation, in the retort, *an alkaline oily matter*; he assures us, moreover, that in examining the sulphuric acid of the capsule, this acid had absorbed a certain quantity of an oily matter which the ether had carried with it.

Properties of the oily alkaloid, obtained by evaporation of the ether.—It was displaced with great facility; its mobility is equal to that of a volatile oil. It remains fluid at 20 degrees (cent.); heated in a show-glass it changed its color considerably, giving off colorless vapors, which turned litmus blue, and which possessed a disagreeable irritating odor, adhering to the throat and producing a sensation of heat and constriction. On approaching it with a glass tube, moistened with a solution of hydrochloric acid, its vapors gave rise to strong white fumes. Exposed to the open air in a covered show-glass, it became colored at the end of 24 hours, losing its fluidity, and ended by changing into a dry matter of a reddish brown color. It produced upon the tongue the acrid taste of tobacco, which was soon followed by a sensation of heat and even of burning, if the quantity was a little larger; this sensation remained for a long time, and extended to the whole mouth, causing the taste of the same matter to disappear entirely. Turned into water, it sank to the bottom forming thixæ, which readily dissolved.

The watery solution was transparent; it was saturated with sulphuric acid; the sulphate was mixed with a syrupy solution of caustic potash, and the mixture thinned by pure ether; it was then decanted and allowed to evaporate spontaneously; there remained a watery,

colorless solution of an alkaloid, having the acrid taste of tobacco. On heating this solution to 100 degrees (c.) vapors were obtained which changed reddened litmus paper blue; the same solution colored the same paper a deep blue; it changed to a brown, paper colored with turmeric, and to a green, that with syrup of violets. In contact with a solution of oxalic acid, containing seven hundredths of this acid, it was neutralized, the neutral liquor was colorless, slightly odorous, and having the acrid taste of tobacco; evaporated in vacuo, over sulphuric acid, it was reduced after several hours to a colorless oil, which did not crystallize at first; but afterwards, heated by water, ended by giving a white mass, having the form of a crystalline vegetation reddening blue paper, because it retained some traces of oxalic acid. The alkaloid was dissolved, when heated with tartaric acid, and the liquid possessed the acrid taste of tobacco, and crystallized imperfectly. Phosphoric acid gave a saline mass of a thick appearance, from which crystalline grains could be separated; when dissolved in alcohol, and the solution acted on by ether, hydrochloric acid formed with it very fine, elongated, needle shaped crystals, which, heated to 100 degree (c.) gave off hydrochloric acid, and changed to a beautiful red. The bichloride of mercury threw down a white precipitate; on heating the precipitate with very dilute hydrochloric acid, there were obtained by evaporation, in vacuo, very brilliant needle-shaped crystals, of a double chloride of mercury and the alkaloid. The hydrochlorate of this alkaloid turned into a solution of chloride of platina, furnished at the end of a few minutes crystals of a beautiful yellow, (quadrilateral rhomboid prisms.) which constituted a double chloride soluble in water. The proto-chloride of palladium gave a chocolate-colored precipitate soluble in an excess of the alkaloid; this syrup, neutralized by a drop of hydrochloric acid, gave a blood-red liquid, which with the addition of proto-chloride of palladium, in quantity equal to that which had been first employed, and left from one day to the next, gave very large flat prisms of a double chloride of platinum and this alkaloid. The chloride of cobalt furnished a greenish blue precipitate, insoluble in an excess of the precipitant; the liquid became colorless and alkaline; and on neutralizing it by dilute hydrochloric acid the precipitate redissolved, and the liquid became a beautiful red color. The chloride of nickel threw down a dirty green precipitate, and the precipitate was not soluble in an excess of the alkaloid; the liquid being neutralized by a hydrochloric acid, the precipitate was noticed to dissolve; the new liquor subjected to spontaneous evaporation furnished very deliquescent

needles, of a delicate green color. Another part of the solution was neutralized by hydriodic acid, mixed with some drops of a watery solution of the bi-ioduret of potassium; it formed a precipitate of the color of kermes, which changed into small oily drops of so intense a red, that they appeared black; washed with water, and left to themselves, they took the form of a crystalline mass formed of needles which decussated each other, and which dissolved in alcohol, which they colored of a blood red. "From the foregoing numerous facts," says M. Stas, "it follows beyond all question that the contents of the stomach contained, in the state of an acid salt, a *very notable quantity of a volatile alkaloid*, of an acrid and burning quality. I shall presently prove that its physical and chemical properties are those of a well characterized organic alkali, *existing in tobacco*, and which is known under the name of *nicotine*. I shall describe also the means I employed to isolate again this alkaloid when contained in the various combinations I am about to mention."

Researches regarding the nature of the acid, which was condensed by the distillation of the contents of the stomach.—M. Stas concluded from his experiments, that this liquid contained a very notable quantity of acetic acid, mixed with a small quantity of butyric acid; to arrive at this result, he saturated the liquid with barytes, and decomposed the acetate by sulphuric acid. The butyric was recognized by treating the syrupy mass with anhydrous alcohol, having the odor of rancid butter, which was caused by the action of barytes on the liquid; this mass, with a small quantity of water added and placed in contact with concentrated sulphuric acid, disengaged the strong odor of butyric acid.

Anatomical examination of the stomach and duodenum, made on the 27th November, seven days after the death of Fournies.—The mucous membrane was red, and much injected; in the great *cul de sac*, and around the pyloric orifice, were observed large blackish livid patches, circumscribed, which involved the mucous and muscular coats. The serous tunic, rose-colored in its whole extent, was newly covered with vessels, filled with a black coagulated mass resembling blood, which had been treated by concentrated sulphuric or hydrochloric acid; as for the rest, the stomach presented no ulcerations nor perforations. The duodenum was very red; there were no livid patches observed, except those in the stomach.

Chemical Examination.

Examination of the alcoholic liquid in which the stomach was

placed—Two hundred and fifty cubic centimetres* of the liquid in which the stomach had remained during 25 days, were decanted, and an equal quantity of pure alcohol was poured over the stomach. The decanted liquor was turbid, reddish, of a disagreeable odor, animal and acid at the same time; it was acidulated with 36 grs. of crystallized oxalic acid, and introduced into a large porcelain capsule, in which it was evaporated to a syrupy consistence, and without ebullition; during the evaporation, it disengaged a sensible odor of acetic acid. The product was taken up by as small a quantity of water as possible, and the solution was filtered in order to separate the grosser matters. The filter was washed with the water with which the capsule had been washed. The liquid obtained was evaporated in its turn, and made to boil to the consistence of a very concentrated syrup; this syrup was yellow, of a putrid odor; it was repeatedly treated with concentrated alcohol, which dissolved a certain quantity and left the animal matters undissolved.

The clear alcoholic solution was cautiously evaporated to one-tenth its volume. The residue, scarcely colored, and strongly acid, was introduced into a proof-bottle, and a strong solution of caustic potash added to it. The alkaline mixture was treated by ether; the ethereal solutions were then reunited in the bottle and left to rest.

One part of the ether was decanted into a small glass capsule, where it was evaporated in the open air, leaving an oily matter, colorless, and having a strong, disagreeable animal odor, acrid, and more or less suffocating, of a burning taste, and alkaline to litmus. This matter was taken up with ether, which wholly dissolved it. The solution turned into another proof-glass, exposed to the air, reproduced the same quantity of colorless liquid, which was immediately subjected, in vacuo, above sulphuric acid; after ten minutes exposure, in vacuo, the liquid was saturated with sulphuric acid; and the solution of the sulphate introduced into a tube, was decomposed by a solution of caustic potash. The mixture was diluted with ether, which reproduced, by evaporation in the open air, a colorless, oily matter, deprived of its animal odor, but having a disagreeable, pungent, irritating smell, and a burning taste. It presented, in a word, all the properties of the alkaloid, obtained from the contents of the stomach.

From these and other facts, which I pass over in silence, it follows, that the alcohol, in which the stomach had been digested, contained the same alkaloid as was found in this organ itself, and that conse-

* About 83 cubic inches.—Tr.

quently the tissue of the stomach was impregnated with this alkali, notwithstanding the two washings with water, to which it had been subjected by M. Stas previous to its being placed in contact with alcohol.

Researches to ascertain if the tongue contained the same alkaloid as that found in the stomach.

Residue of the evaporation of the waters of the washing of the tongue—This was dissolved in as small a quantity of water as possible; to the turbid solution anhydrous alcohol was added, until it produced no longer a precipitate of organic matter. The alcohol after sufficient repose, was decanted into a small capsule of porcelain and evaporated in the open air; a product remained, slightly yellow, acid, of a pungent taste; this was dissolved in as small a quantity of water as possible, and the solution was introduced into a small flagon, and a part of its volume of a solution of pure potash added; the alkaline mixture, of a deep yellow at first, soon changed to a brown; it was then agitated with twice its volume of ether. After being left at rest a sufficient time, a small part of the ether was decanted into a glass vessel, and left to spontaneous evaporation; there remained oily striæ, of a pungent, disagreeable odor, and a sharp, burning taste like tobacco, and which changed reddened litmus to a deep blue. The remainder of the ether was decanted into a proof-bottle with an emery stopper, and kept for determining its chemical properties.

Residue proceeding from the decoctions of the tissue of the tongue.—This was dissolved in water, then filtered and evaporated to the consistence of a syrup—this, which was acid, was mixed with alcohol, until there was no longer any precipitate. The alcohol was then decanted and subjected to slow evaporation: the product was taken up by as small a quantity of water as possible, and mixed with its own volume of a strong solution of pure caustic potash. The mixture took on a deep yellow hue; it was digested with ether; a small part of the ether was decanted into a glass proof-bottle, and being left to spontaneous evaporation, furnished oily striæ, alkaline, having an animal, pungent odor, and a disagreeable burning taste.

Experiments made with the alcohol in which the lower jaw, tongue, fauces and larynx had been macerated.—The alcohol previously acidulated with oxalic acid, was evaporated at 40 degrees* (centigrade);

* To reduce the centigrade to Fahrenheit, multiply by 9 and divide by 5.
—($40 \times 9 = 360 \div 5 = 72^\circ$ Fahr.)

it left a yellow syrup, on which fatty matters floated, this was mixed with water and filtered; the liquor was evaporated to the consistence of an extract; and the product was treated by anhydrous alcohol, as long as it took up any of the animal matter which had become insoluble. The alcoholic solution was evaporated at a temperature of 40 degrees (75° F.). The product which was formed was acid, and was dissolved in as small a quantity of water as possible. To its solution, an equal quantity of a strong solution of potash was added, and the alkaline mixture diluted with pure ether. The ether, evaporated spontaneously, after having been decanted, left a notable quantity of oily matter, colorless, having both an animal and disagreeable odor, and an acrid, burning taste; it was strongly alkaline. After having described some other similar experiments, and having placed the oily matter in contact with the bichloride of mercury, the protochloride of palladium, the chloride of cobalt, the bioduret of potassium, &c. M. Stas concludes that the tongue, the fauces, &c., contained in the state of an acid salt, the same alkaloid as the membranes of the stomach and the contents of that organ.

Researches with regard to the Liver.—The liver, cut into fragments, having been pressed, gave out a liquid which was mixed with alcohol in which the liver had digested for twenty days. The brown mixture reddened litmus; it was heated at a temperature of 50 degrees (c.), and 96 grs. of crystallized oxalic acid added; this acid on dissolving, immediately coagulated the liquid; it was filtered, and washed with alcohol. The filtered liquid was limpid and colorless; it was evaporated in a strong current of air at 40 degrees (c.). When, from the evaporation of the alcohol, it was reduced to one-tenth its volume, it deposited grayish flocculi, and there floated a certain quantity of fatty matter, which solidified on cooling. In this state it was filtered; the liquid was limpid, yellowish, acid, and had a putrid animal odor: evaporated, in vacuo, it left a solid, yellow matter, which was divided to be treated with anhydrous and cold alcohol. The alcoholic solutions, after sufficient rest, were decanted into a small capsule, and heated to 30 degrees in a strong current of air; they gave a syrupy product, of a disagreeable odor, slightly colored yellow, in which were observed some mamillary crystals. It was mixed with one-fourth its volume of pure caustic potash; the mixture was repeatedly heated with ether; this, on evaporation, left some colorless oily striæ, opaline, which were the same *alkaloid*.

Examination of the Lungs and the Heart.—The lungs were gorged with liquid and excessively black blood; they presented all

the characters which we observed in the asphyxia. The heart was normal, its cavities filled with black blood, uncoagulated. The lungs, subjected to the reagents already named, and to the processes described, furnished the alkaloid. I believe, says M. Stas, without being able at present to prove it, that the quantity of alkaloid I extracted from the lungs, is greater than that which I found in the liver. I notice this fact, because it is contrary to the opinion, at present so generally received, that certain matters, and above all poisonous substances, concentrate more in the liver than in the lungs or any other organ.

Extraction of the alkaloid contained in the preceding organs.—All the compounds mentioned above, and which were preserved in close-stopped bottles, were diluted or dissolved in water, and introduced, with the waters of the washings of the vessels, into a proof-bottle, and after a strong solution of caustic potash was added, were immediately after agitated and exhausted by ether.

The different ethereal solutions were united, and left in an open vessel a suitable period. The ether was afterwards turned, part at a time, into a large tube of glass, narrowed at one end to a point A, open and bent; it was evaporated by passing through it a current of pure and dry hydrogen gas. In proportion as the ether escaped, it was replaced by a new quantity of the solution of the alkaloid. When all the ether was volatilized, the tube was inclined so as to raise the contracted end *a*. The end was cut with a stroke of a file, and all the liquid contained in this part flowed into the large tube. In this position the narrow tube *a* is introduced into an opening made in a small stopple, which is fitted to an apparatus, composed, at first, of the end of a tube two-thirds of a centimetre* in diameter, and about five centimetres in length; the end of this tube is blown into a globe B, terminated by a straight tube, and destined, the one to serve as a retort, the other as a neck for the passage of the waters to be condensed in another part of the tube serving as a receiver. This last part is a little dilated towards the bottom, in order to retain the condensed liquid; it is contracted at the other end, in order to be closed when the process is ended.

This apparatus, being connected with the tube *a*, the large end of this tube remaining open, is placed in communication with an apparatus for the disengagement of pure, dry hydrogen, by means of a pierced stopple, which is adapted to the tube. By the position

* A centimetre is equal to about four lines.

which the large tube A takes, the liquid contained in it flows into the globe B. The whole being solidly fixed, and the apparatus filled with pure, dry hydrogen, the tube A is heated with the greatest precaution to about 200 degrees (cent.) The small quantity of fluid which moistens the interior surface, passes into the globe B, which is heated in its turn, at first slowly, and then more rapidly. All the liquid contained in it is changed without boiling into colorless vapors, which condenses in the receiver C.

The globe B contains absolutely no residuc. "*I thus proved,*" says M. Stas, "*that the alkaloid is volatile, without residue and without change.*"

When the distillation was terminated, the narrowed tubes which terminated in the receiver C were cut and closed with a blow-pipe.

The receiver contained a changeable liquid, of a light yellow color. It was inclosed in a box, and labelled, "*Nicotine extracted from the organs of Gustavus Fournies.*"

NOTE.—Wishing to satisfy myself that ether could completely take up from the liquid all the alkaline matter contained in it, I introduced it into a glass retort, to which a receiver was attached, well cooled, and in communication with an apparatus for the disengagement of pure hydrogen. In order to avoid the change which the alkaloid might undergo by the simultaneous action of the air and heat, I at first filled the whole apparatus with hydrogen; I then slightly heated the retort to eliminate all the ether which was dissolved in the liquid; in fine, I proceeded with the distillation, being careful to disengage the hydrogen slowly but constantly. There were condensed in the receiver about 250 cubic centimetres of a colorless fluid, of a strong disagreeable odor, which changed reddened litmus paper to a deep blue; it was completely neutralized by oxalic acid, and afterwards exposed in vacuo, above sulphuric acid; there was left a saline residue, slightly white, with an acid reaction of a saline and pungent taste at the same time. This residue was introduced into a bottle, and treated with anhydrous alcohol; the alcohol, after digesting for fifteen minutes, was decanted upon a filter. The colorless liquid which passed over was evaporated in vacuo; it left an oily ring, with an acid reaction, and an excessively burning taste. This ring was taken up by a small quantity of water; the solution conducted in a tube, and mixed with its volume of a solution of potass. The mixture was agitated with ether. The evaporation of the decanted ether left oily striæ, strongly alkaline, of a sharp odor, and the pungent burning taste of tobacco. The small quantity of the oily matter obtained proved that the ether had taken up almost entirely the volatile alkaloid from the alkaline solution; at least, the quantity which remained is insignificant, compared with that which was taken up by the ether.

PART SECOND.

CRITICAL ANALYSIS.

ART VIII.—*Report on the Mortality of Cholera in England, 1848-49.* London, 1852: Printed by W. Clowes & Sons for Her Majesty's Stationery Office. Royal 8vo. pp. 474.

THIS is the most elaborate statistical work on cholera that has ever come to our notice. It is drawn up by Mr. Farr, assisted by Messrs. Hammack, Thornton, Clode, Cocke, Sorry and Angus, from the official returns made to the Registrar General. It is not our intention to enter into an elaborate analysis of the matter contained in this Report. Such a labor would require more time, and be attended with more labor than we can command on the present occasion. We shall, however, attempt to give our readers a short abstract of such portions of the Report proper by Mr. Farr, as shall furnish them with the main facts embodied in it.

The main body of the Report opens with a few leading remarks on the general hygienic conditions and the usual rates of mortality in the county and town districts of England, &c., in which it is claimed that England is the healthiest country in the world, and in which the following table from the Sixth "Annual Report is cited," where the data will be found for these and other estimates.

England,	22	deaths annually to 1000 living.
France,	24	" " to 1000 "
Prussia,	27	" " to 1000 "
Austria,	30	" " to 1000 "
Russia,	36	" " to 1000 "

Passing from this, Mr. Farr alludes to the outbreaks of cholera in India and its gradual spread over the Old World—to the prevalence of summer cholera in England in 1846—and then enters upon the consideration of the epidemic of 1848-49 in London, and its spread generally throughout England. Following are sections on the following subjects.

1. *Influence of Sex on the mortality from Cholera.*—"The deaths from cholera among males were 26,108, females, 27,185; it consequently destroyed 1077 more females than males. The proportions were reversed in diarrhoea, which was fatal to 9,637 males, and 9,250 females. The population of England and Wales returned at the census without revision, was on March 31st, 1851, males, 8,762,588; females, 9,160,180. And correcting for increase of population, the mortality from cholera at all ages in 1849, was—

Males 30.2 to 10,000 living, or 1 in 331.

Females 30.0, to 10,000 living or 1 in 333.

"The mortality is thus a shade less among females than it is among males; but the difference is much less than it is from all other fatal diseases in ordinary years; when the total deaths among males is invariably greater than the deaths among females. Thus, in the year 1848, the deaths among males from all causes, amounted to 202,949, of females to 196,851. And in the seven years 1838-44 the annual rate of mortality among males was 2.270, females 2.104 per cent." It is also stated that it is worthy of remark, that at the beginning of the epidemic the deaths of males exceeds the deaths of females very considerably. And, as a general rule, when the mortality from cholera attained a very high rate, the number of deaths among females exceeds the deaths among males.

2. *Mortality at different ages.*—It appears that cholera proved most fatal in the middle period of life. It carried off 3,866 boys under 5 years of age; 3,837 men of 25 and under 35; and 2 old men of 95 and upwards. Dividing the lifetime into 3 stages, the disease carried off 7,673 boys and 7,045 girls under 15 years of age; 14,861 men, and 15,767 women of 15 and under 60 years of age; 3,546 men, and 4,355 women of the age of 60 and upwards. The deaths were thus more numerous in the middle and most active period of life. The proportions of deaths at the several ages are different in diarrhoea; the deaths of children and of old people being much more numerous than the deaths of persons in the middle period of life. Thus the deaths of 6,794 boys and 6,058 girls under 15, of 1235 men, and 1398 of the

ages of 15 to 60, of 1607 men, and 1791 women of the age of 60 and upwards, were referred to diarrhœa. It appears to be exceedingly probable that the cases of diarrhœa in 1849, barring a certain deduction, are cases of cholera, with the striking but not essential symptoms suppressed. And it is worthy of observation that this suppression of morbid action occurs at the ages when the organization is most feeble, either because the system is not fully developed, or because it is worn out."

Duration of Cases of Cholera.—The mean duration of fatal cases was 50.44 hours in females, and 49.44 in males. "The woman attacked lived on an average an hour longer than the man. The duration of life, after well-marked symptoms of a fatal attack of cholera have set in, appears to diminish as age advances." The duration of fatal cases of cholera at various ages, were as follows :

Persons of the age of 15 to 35 ; 50 904 hours.

Persons of the age of 35 to 55 ; 46 896 hours.

Persons of the age of 55 and upwards, 47 352 hours.

Contrasted with fatal cholera, "fatal diarrhœa is a disease of much longer duration ; and it agrees with cholera in being of somewhat longer duration in females than in males ; in both sexes, at the age of 15-35, than at ages farther advanced." The duration of fatal cases of diarrhœa at various ages were as follows :

Males, all ages,	-	-	-	16 044 days.
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Females, all ages,	-	-	-	16 692 days.
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Males and Females, age 15-35,	-	-	-	18 668 days.
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Males and Females, age 35 and upwards,	-	-	-	17 544 days.
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Influence of the Seasons in 1831-2 and 1848-9.—The two epidemics of cholera in England, it appears, continued fifteen months, they began in October, spread gradually, increased, and then as Spring advanced partially subsided. "The first epidemic descended to the lowest point in May 1832, and rose to the highest pitch in August, when it caused 29 per cent. of the total deaths. The second epidemic descended to the lowest point in April, 1849, and was most fatal in September, when it caused 37 per cent. of the total deaths. It is worthy of remark, that the cholera in both epidemics entered England after the wheat harvest was over, at the close of the hot season, and that it was most fatal in and after the wheat harvest of the year following."

The following table will show the distribution of the deaths from cholera in England, in the two epidemics over the several months.

Months.	Deaths from Cholera in England.		Of the total deaths from Cholera, the proportion, p. cent. in each month.	
	1831-32.	1848-49.	1831-32.	1848-49.
1831-1848.				
October,	?	354	?	·651
November, .	97	376	·314	·691
December,	282	375	·912	·689
1832-1849.				
January, .	614	658	1·986	1 210
February, . .	708	371	2·289	·682
March, . . .	1,519	302	4·912	·555
April, . . .	1,401	107	4·530	·197
May, . . .	748	327	2·419	·601
June, . . .	1,363	2,046	4 408	3 761
July, . . .	4,816	7,570	15 574	13 916
August, . . .	8,875	15,872	28·699	29·178
September, . .	5,479	20,379	17·718	37 463
October, . . .	4,080	4,654	13·194	8 555
November, . .	802	844	2·593	1·552
December, . .	140	163	·453	·300
Total, . . .	30,924	54,398	100·000	100 000

Influence of Locality.—In reference to this point, we learn that cholera was three times more fatal on the coast than in the interior of the country. This is clearly shown by the fact, that 36,241 of the deaths from cholera occurred in the districts lying against the low navigable rivers and the seas; 17,052 in the interior; “And as the population of the coast districts was nearly seven and a half millions, and that of the part of the country within this circuit ten and a half millions, the mortality in the coast districts was at the rate of fifty, and in the inland districts at the rate of seventeen in 10,000.” And further on, it is stated that “the mortality in the great ports was at the rate of 125 to 10,000 inhabitants; in the 125 coast districts with small ports, often inaccessible to ships, the mortality in 10,000 was only fifteen; which is one-eighth part of the mortality in the great, one-third part of the mortality (47) in the secondary ports.”

“Cholera reigned wherever it found a dense population on the low alluvial soils of rivers, round the estuaries of the Thames, the Humber, the Mersey, the Severn, the Tamar, and their tributary waters.” And again, “The cholera was not generally fatal on the primary geological formations; on the granite, the Silurian, or the Devonian systems; while Herefordshire, however, on the old red sandstones, escaped, Cornwall and the South of Devon, on the same formation,

suffered severely. Plymouth, and the districts around the Sound into which the Tamar flows, was one of the principal cholera fields; but it is a port, and the mouth of a river which rises partially in the millstone grit, forming a part of the carboniferous system."

The Causes of the Mortality in London.—The principal elements which enter into the estimate of the causes of cholera mortality in London are, the supply of water, the drainage and the elevation of the soil, the density of the population, and the poverty of the inhabitants. In this portion of the report the reader will find some curious and interesting facts elicited; and by a unique chart given in the appendix, there can be seen at a moment's glance of the eye, the mean temperature of any week, and the mortality in London for the years 1840 to '49 inclusive. This is an exceedingly curious chart, and by it are elicited facts which it would be exceedingly difficult to express by figures.

The river Thames, it is said, collects the waters of 6,160 square miles of country, and the great body of this water flows and reflows through London in tides. "The contents of the greater part of the drains, sinks, and water-closets of this vast city, and of the 2,360,000 people on its sides, are discharged through its sewers into its waters, which, scarcely sullied by the primitive inhabitants, have now lost all their clearness and purity. The dark, turbid, dirty waters from half-stagnant sewers are agitated by the tides, but are not purified until they reach the sea."

In regard to the effect of temperature upon the waters and health of London, we find the following: "It is a fact well worthy of attention, that after the temperature of the Thames has risen above 60°, diarrhœa, summer cholera, and dysentery become prevalent, and disappear as the temperature subsides. The cholera reached London in the new epidemic form about October, 1848; it prevailed through the winter, and destroyed ninety-four lives in the second week of January, when the temperature of the Thames was 37°; it declined rapidly through April and May; the night temperature of the Thames then rose to 62° in the week ending June 2d; with some fluctuation it went up to 68° in July, and remained above 60° until the middle of September (week ending Sep. 15th). The deaths of cholera registered in each of the sixteen weeks were 9, 22, 42, 49, 124, 152, 339, 678, 783, 926, 823, 1,230, 1,663, 2,026, 1,682. The mean night temperature of the Thames fell to 56°; the deaths from cholera to 839 in the week Sep. 16–22; the temperature generally fell to 38° on the last week of November, when there was only *one* death from cholera registered."

Water Supply.—By referring to this point, it was found that “in the six districts, which are supplied with water taken from the Thames at Kew and Hammersmith, 15 in 10,000 inhabitants died from cholera; and the mortality ranged from 8 to 33. In the 20 districts which are supplied with water from the Amwell, the Lea, and the Ravensbourne, 48 in 10,000 inhabitants died of cholera; and the mortality ranged from 19 to 96. In the 12 districts which are supplied with water taken from the Thames between Battersea and Waterloo Bridge, 123 in 10,000 inhabitants died of cholera, and the mortality ranged from 28 to 205.

Elevation—That the elevation of soil had a more constant relation to the mortality in cholera in London than any other known element, was a fixed fact. In the language of the Report: “Notwithstanding the disturbance produced by the operation of other causes, the mortality from cholera in London bore a certain constant relation to the elevation of the soil, as is evident when the districts are arranged by groups in the order of their altitude. We place the districts together, which are not on an average 20 feet above the Thames, and find that on the bottom of the London basin the mortality was at the average rate of 102 in 10,000; in the second group, at 20 and under 40 feet of elevation, or on the second terrace, the mortality from cholera was at the rate of 65 in 10,000; in the third group, or on the third terrace, 40 to 60 feet high, the mortality from cholera was at the rate of 34 in 10,000; in the fourth group, 60 to 80 feet high, the mortality from cholera was at the rate of 27 in 10,000; in the fifth group, 80 to 100 feet high, the mortality was at the rate of 22 in 10,000; in a district 100 feet high, the mortality was 17 in 10,000; in Hampstead, about 350 feet high, the mortality was 8, or deducting a stranger infected at Wandsworth, but who died there, 7 in 10,000.”

Density.—It appears from this report that density of population, contrasted with elevation of soil, has but little influence as an element among the determining causes of cholera.

Wealth and Poverty.—Upon this head, Mr. Farr says, “I find it impossible at present to establish any definite relation between the various degrees of wealth and of the mortality of cholera, further than that in districts of some elevation, wealth does exert a certain influence on the mortality both of cholera and of ordinary diseases.”

The next point which is touched upon in the Report, is the “*Conditions in which cholera is most fatal.*” From this portion we extract the following remarks: “Under any circumstances, it is cer-

tain that in this, as in other zymotic diseases, great multitudes of the people who in one way or another take an average dose of the poison, resist its influence; and it may be admitted that the number attacked bear some proportion to the specific matter in the air, water, or earth of the place where they dwell. This specific matter is known only by its effects; but it has been shown that the deaths from cholera vary in some proportion to the quantity of organic matter in the state so commonly observed in the low parts of low towns. Our generalizations, then, go to this extent, that the cause of cholera is some modification of organic matter; and here is the great practical fact—that *although elevation of habitation, with purity of air and purity of water, does not shut out the cause of cholera, it reduces its effects to insignificance.*

That portion of the report which follows is mainly occupied with the consideration of the different theories, which have been propounded in regard to cholera. This portion, wanting in practical facts, contrasts strongly with the portion, the examination of which has thus far occupied our attention, and which gives character to one of the best and most elaborate statistical Reports ever published.

ART. IX.—*Lectures on the Principles and Practice of Surgery.*

By BRANSBY B. COOPER, F. R. S., Senior Surgeon to Guy's Hospital, etc., etc. Philadelphia: Blanchard and Lea 8vo. pp. 771.

The Principles and Practice of Surgery. Illustrated by three hundred and sixteen engravings, on wood. By WILLIAM PIRRIE, F. R. S. E., Regius Professor of Surgery in the Marischall College and University of Aberdeen, etc., etc. Edited, with additions, by JOHN NEILL, M. D., Surgeon to the Penn. Hospital, etc., etc. Philadelphia: Blanchard and Lea. 1852. 8vo. pp. 784.

THE volume by Mr. Cooper, whose title is given above, contains seventy-five lectures, whose contents are of a practical character, embodying the experience of twenty-five years, during which time he has occupied the position of Surgeon to Guy's Hospital. These lectures were first published as delivered, in the *London Medical Gazette*, for 1848-49. They have been revised and extended for their present form, and we can assure our readers, that they are a clever contribution to the practice and general principles of the science of surgery—a contribution which ought, and we doubt not will, receive the approbation of the profession.

The work of Mr. Pirrie comes to us with extremely modest pretensions. It does not claim "competition with any of the valuable treatises on the same subject already existing," but is put forth as a compendium of the author's lectures, in compliance with a wish repeatedly expressed by his pupils. Having seen the announcement in the preface of the work, we opened the volume with an eye to its compendious character, but we had not extended our examination far, before we found that the treatise goes much beyond the range claimed for it. However well it may be adapted for a text-book (and in this respect it may compete with the best of them); of this much our reading has convinced us, that as a systematic treatise, it is carefully and ably written, and can hardly fail to command a prominent position in the library of practitioners; though not complete in the fullest sense of the word, it nevertheless furnishes the student and practitioner with as chaste and concise a work, as exists in our language.

The following remarks on dissecting wounds, may be cited as a sample of Mr. Pirrie's style:—"Dissecting wounds are frequently received without bad consequences, but sometimes they give rise to serious and fatal results. They are chiefly dangerous when the health of the dissector is impaired from any cause, or when the virus is received from a body, in which the cause of death has been puerperal disease, or acute inflammation of serous membranes.

"In slight cases, where bad results occur, the wound inflames in a few hours, and a pustule forms, which, on bursting, discharges a thin, unhealthy matter, and is converted into an acute ulcer. [The pustule is often umbilicoid, resembling a small-pox pustule. When opened, in the early stage, serum escapes, which is nearly transparent, and the yellow appearance of the pustule still remains, showing that its color does not depend always upon pus, but upon a fibrinous exudation. In a short time, the vesicle becomes large, and is refilled with serum, which, as the inflammation advances, will be found to contain pus. Should it heal by scabbing, the scab will be very thick, and composed in a great measure of cuticle, and will be very slow in dropping off.—ED.] In more severe cases, erythema, erysipelas, whitlow, or inflammation of the lymphatics of the arm may occur; or chronic abscess with induration, or acute abscess with purulent infiltration, may form in the axilla; and this last complication frequently extends down the corresponding side of the thorax. In very severe cases, the axillary symptoms, commencing with acute pain, and rapid formation of abscess, may occur before much irritation about the wound is perceived. The constitutional vary in in-

tensity. In slight cases the constitutional affection may be sthenic and trivial, but in more severe instances, the asthenic, irritative, or even typhoid type, prevails. In the worst instances, the systemic disorder appears before the occurrence of any very distinct local signs of inflammation.

“The treatment of the wound varies according to its form and the subject from which the virus has been introduced. If the body be that of a person who has died of acute peritoneal or puerperal disease, it is advisable, after washing, to make a perfect excision of the wounded part; to allow oozing to go on for a short period, and if any time has been allowed to elapse between the infliction of the wound, and the performance of the excision, in addition to the above proceedings, to employ suction, and after oozing has ceased, to touch the part very freely with the nitrate of silver, with the view of effecting destruction of any virus that may be lurking in it. In any ordinary case it will be considered sufficient to wash the part instantly, to suck it well, and if it be a mere puncture, and do not bleed, to enlarge the opening slightly with a clean pointed knife, so as to encourage the flow of blood, and thus favor the removal of any matter. The nitrate of silver is frequently employed as an escharotic, after suction, without excision, and is probably useful by destroying or neutralizing the virus, if present, and by forming a crust of coagulable effusion, which prevents the admission of noxious matter. I should never, in any case of poisoned wound, trust to an escharotic alone; and it ought to be remembered, that if the nitrate of silver be used gently, it acts merely as an astringent, and that it is only when it is used very energetically, that it has an escharotic effect. It is advisable for some time to preserve the part at rest, in an elevated position, and to inclose it for a few hours in a soft soothing poultice. [In the treatment of pustules, arising from dissecting wounds, I have found it very serviceable to apply the nitrate of silver freely to the inflamed surface contiguous to the pustule, and to inclose the limb in a large cold poultice of Indian meal. The burning sensation experienced in dissecting wounds is increased by hot adhesive poultices, such as those made of ground flaxseed; but the Indian meal being less glutinous, allows evaporation to take place, while the skin is still kept moist—ED.] The digestive organs should be cleared out, the diet attended to, and all sources of local or constitutional irritation avoided. If constitutional or local symptoms supervene, they should be treated according to the general principles already mentioned.”

The additions to the volume by Dr. Neill, are judicious; and,

while they render it more complete, greatly enhance its practical value, as a work for practitioners and students.

ART. X.—*On the Surgical Treatment of Polypi of the Larynx and Œdema of the Glottis.* By HORACE GREEN, A. M., M. D., President of the Faculty, and Professor of the Theory and Practice of Medicine, in the New-York Medical College, Member of the American Medical Association, etc, etc. New York: G. P. Putnam. 1852. 8vo. pp. 124.

By the preface of this work, we are told, that it "has been undertaken in order to give the profession the personal observations of the author, on the nature and treatment of two of the most mortal affections of the air-tubes;" and, further on, it is stated, that "the author does not hesitate to express the opinion, and leave it for future experience to confirm or invalidate, that foreign growths have occurred in the opening of the air-passages, in many instances, where their presence was neither expected nor discovered; and that, if the attention of the profession should by any means be directed to this subject, it will be found that the existence of polypus, or other excrescences in these passages, is an occurrence taking place much more frequently, than has been supposed by Medical Practitioners."

Dr Green reports two cases of morbid growths in the larynx, successfully treated in his own practice; the remaining cases cited, are principally noticed in the paper of Prof. Parker, contained in 8th vol., N. S., of this Journal. Three cases of œdema glottidis, are reported by Dr. Green, as coming under his own observation, which were treated successfully by strong solutions of nitrate of silver to the affected parts. Dr. Green prefers the method of scarifications. "In treating œdema of the glottis by topical medication, a strong solution of the crystals of nitrate of silver, of the strength of two scruples or a drachm of the salt, to an ounce of water, should be employed.

M. Lisfranc is said to have been the first to recommend and employ the method of puncturing, or scarifying, in œdema of the glottis. The same plan (says Dr. G.) "has recently been adopted in the New York Hospital; and several cases have been reported by Dr. Buck, one of the surgeons of this charity, where scarifications of the œdematous parts, proved, apparently, the means of restoring the patients." Dr. Buck has reported eleven cases, *all successfully* treated by the operation. The mechanical execution of the work is good, and the four plates which accompany it are good specimens of the lithographic art.

PART THIRD.

FOREIGN MEDICAL RETROSPECT.

PATHOLOGY AND PRACTICAL MEDICINE.

Differential Diagnosis of Aneurisms of the Arteria Innominata, and Arch of the Aorta. By DR. HOLLAND. (*Dublin Quar. Journ. Med. Science.*)—The CONCLUSIONS arrived at by the author are subjoined. He offers them as “representing the present state of our knowledge of the differential diagnosis of aneurisms of the transverse portion of the arch, from those of the arteria innominata; and as containing some of the elements of a diagnosis that clinical observation will bring to perfection.”

In Aneurisms of the Arteria Innominata.

“1. External tumor is a frequent and early sign, situated generally above the inner third of right clavicle.

“2. Arteries in right arm, and on the right side of neck and head, generally pulsate weaker than those on the left.

“3. Stridulous respiration, cough, dysphagia, alteration in the voice, and dyspnœa, are comparatively rare.

“4. Pain, œdema, and enlargement of the veins, begin in right arm or the right side of neck and head; they may finally extend to the left side.

In Aneurisms of the Transverse Portion of the Arch.

“1. External tumor occurs comparatively rarer and later, situated generally at the left side of, or under the sternum.

“2. Arteries in left arm, and on the left side of neck and head, generally pulsate weaker than those on the right.

“3. Stridulous respiration, cough, dysphagia, alteration in the voice, and dyspnœa, are comparatively frequent.

“4. Pain, œdema, and enlargement of the veins, begin in left arm or the left side of neck and head; they may finally extend to the right side.

"5. Partial loss of motion or sensation in the right arm is a comparatively frequent symptom.

"6. Dislocation of the clavicle, trachea, or larynx, a comparatively frequent occurrence.

"7. Alteration in the intensity of the respiratory murmur occurs but very rarely, and then it is weaker in the right lung.

"8. Abnormal arterial murmurs in the right carotid or subclavian.

"9. Pressure on the right carotid and subclavian diminishes or stops the pulsations of the tumor."

"5. Partial loss of motion or sensation in the right arm is a comparatively rare symptom.

"6. Dislocation of the clavicle, trachea, or larynx, very seldom occurs.

"7. Alteration in the intensity of the respiratory murmur occurs very frequently, and then it is generally weaker in the left lung.

"8. Abnormal arterial murmurs loudest in left carotid or subclavian; heard also along the spinal column posteriorly.

"9. Pressure on the carotid and subclavian, on either side, has but little effect on the pulsations of the tumor."

On the Use of Manganese as an adjuvant to Iron. By M. PÉTREQUIN. (*Bulletin. General de Therapeu*)—M. Pétrequin quotes various authors to prove that manganese is a normal constituent of animal and vegetable tissues; and believes that wherever iron is present in appreciable quantity, manganese coexists with it. Hence iron alone will not always succeed in blood-diseases. M. Pétrequin has observed many cases of chlorosis, which have resisted iron as obstinately as anæmia connected with cancer or organic degeneration. Other cases again, after deriving a certain amount of benefit from iron, remain stationary. Others again appear cured as iron, but the cure is not permanent. The remedy required in these cases, M. Pétrequin finds to be manganese. He does not give it or iron alone; but combines them.

It is especially in *diseases of the blood* that ferro-manganic medicines are useful. They have a special action on the vascular apparatus, on the formation of the blood, and on the circulating fluid itself. They do not act merely as tonics or astringents; but are regenerators of the blood. They have succeeded admirably in anæmia following hæmorrhage, operations, polypi, metorrhagia, etc.; also in the chlorosis attending puberty, which is a more common disease than is generally supposed, and occurs even in males. M. Pétrequin has also frequently found the combinations of iron with manganese of benefit in the diseases of women at the critical period. He has often seen, in these subjects, *metorrhagia*, accompanied with an aspect of the surface which would lead to the suspicion of organic uterine disease: the hæmorrhage, however, was but a complication, and the patients, apparently in a hopeless state, have recovered under the use of ferro-manganic preparations, conjoined with tonics and ergotine.

In *amenorrhæa* and *dysmenorrhæa*, the patients often imagine that

they require to be bled; but care must generally be taken not to comply with this request. M. Pétrequin has more than once seen cases of amenorrhœa with severe chlorosis, in which it has not been desirable to hasten the appearance of the catamenia—the consequent loss of blood aggravating the disease. The general state of health must here be carefully attended to. Œdema of the lower limbs sometimes occurs in these cases; but it is a less severe complication than when it attends metrorrhagia. It often disappears, as the patient recovers, under the use of iron and manganese.

These medicines are no less efficacious in the treatment of *anæmia* resulting from prolonged intermittent fevers, prolonged suppuration, strumous, syphilitic, or cancerous affections, phthisis, etc. Pills and the syrup of the iodide of manganese and iron are preferable in these cases.

In all these cases, the ferro-manganic preparations do not merely act on the stomach and nervous system, but they are absorbed, and assist in the formation of hæmotosine and new blood-globules, so as to restore the blood to its normal condition. Their effect in this way is greater than that of iron alone.

In the *functional affections of the heart* connected with chlorosis and anæmia, and which must not be mistaken for organic disease, a combination of iron and manganese with digitalis and other moderators of the heart's action is advantageous. The same remark applies to the *functional disorders of the lungs*, attending the same constitutional states.

Disordered states of the nervous system are intimately connected with those of the blood. M. Pétrequin has found that the ferro-manganic preparations succeed well in these, even though uncomplicated with chlorosis. He, as well as M. Gubian, has observed that iron is here better tolerated when combined with manganese. He has also seen benefit from the use of iron with manganese in many cases of *dyspepsia gastralgia*, and *gastro-enteralgia*. Nervous affections of the digestive organs are often the result of chlorosis; and, where stomachics and cinchona have failed, iron has often been found (especially the carbonate, by some English physicians) to be of service. Gastrodynia complicating chlorosis has often yielded to the use of ferro-manganiferous water, and to pills of carbonate of iron and manganese.

In *nervous affections connected with exhaustion* from venereal excesses, onanism, rapid growth, &c., as well as in leucorrhœa, diabetes, &c., M. Pétrequin has a high opinion of these medicines. He is continuing his researches on their action in certain cases of sterility from asthenia, and in some hyposthenic affections of the scalp, such as early baldness, alopecia, &c.

M. Pétrequin has confined his observations to a limited number of the ferro-manganic preparations; and has made many observations before publishing the formulæ which he finds most useful. Having found, even at an early period, that the medicines were liable to adulteration, he has availed himself of the assistance of competent

pharmacutists. Since the publication of his first memoir, in 1849, these medicines have been extensively used in the south of France and in foreign countries.

The formulæ are few, and correspond to the preparations of iron generally used in France. They are: 1. *Pills* of carbonate of iron and manganese, or iodide; 2. *Lozenges* of lactate of iron and manganese; 3. *Syrups* of lactate or of iodide of iron and manganese; 4. *Ferro-manganic chocolate*; 5. *Effervescing solution* of iron and manganese.

It has been observed that manganese not only preserves water, but purifies that which has undergone change (Martin-Lauzer). Ferro-manganic waters (of which there are many in France and other parts of the continent) can be preserved and carried to a distance;—which cannot generally be done with simple ferruginous waters.

M. Pétrequin commences by giving the powder of iron and manganese, with some vinous drink; he then administers two pills daily, one before breakfast and one before dinner, replacing them soon by the lozenges. The syrups and chocolate complete the treatment. He gives the medicines at meal-time. The syrup he gives before breakfast, in doses of a tea-spoonful; and he finds it useful to administer directly after it some infusion of centaury, or of camomile flowers and orange.

Large doses are unnecessary and useless; for they are liable to produce irritation of the stomach and exhaustion of the nervous system; and the reparation of the blood is slow and progressive, and cannot, even were it desirable, be effected rapidly. Besides, the iron and manganese are not absorbed in any greater quantity, if large doses are given.

Preparations of Manganese and Iron.—M. BURIN-DUBUISSON of Lyons, who prepared most of the ferro-manganic combinations used by M. Pétrequin, has published an interesting *brochure*, in which he gives the necessary details relating to the subject. The following formulæ are extracted from it.

Powder for Effervescing Solution of Manganese and Iron.—Take of coarsely powdered bicarbonate of soda, 20 parts; tartaric acid, 25 parts; powdered sugar, 53 parts; finely powdered sulphate of iron, $1\frac{1}{2}$ parts; finely powdered sulphate of manganese, $\frac{3}{4}$ parts: mix carefully, and keep in well stopped bottles. A teaspoonful is mixed with each glass of wine and water drunk during meal-time.

Pills of Carbonate of Iron and Manganese.—Take of pure crystallized sulphate of iron, 75 parts; pure crystallized sulphate of manganese, 25 parts; crystallized carbonate of soda, 120 parts; honey, 60 parts; water a sufficient quantity. Pills of 20 centigrammes (3 grains) are made; they keep easily, without becoming oxidized, in well-closed vessels. From two to four are given daily.

Ferro-manganic Chocolate.—One part of carbonate of iron and

manganese is first mixed with four of sugar, and divided into large lozenges; of these, 100 parts (grammes) are mixed with 500 of chocolate paste, in the preparation of which 100 parts of sugar have been left out. This will make 800 lozenges, each of which contains about 3 centigrammes (nearly half a grain) of carbonate of iron and manganese. The chocolate decomposes the hydrated carbonate of manganese and iron of the saccharate into hydrated sesquioxide of iron and manganese; there is no metallic taste.

Syrup of Lactate of Iron and Manganese.—Take of lactate of iron and manganese, 4 parts; powdered sugar, 16 parts; rub together, and add of distilled water, 200 parts; dissolve rapidly, and pour into a matrass over a water-bath, containing 384 parts of broken sugar: filter the solution. This syrup contains about fifteen parts of lactate of iron and 5 of lactate of manganese in 3,000 parts. One or two spoonfuls are taken daily.

Lozenges of Lactate of Iron and Manganese are made by adding 20 parts of the lactate to 400 of fine sugar, with a sufficient quantity of water. The mass will make 840 lozenges; of which six or eight are taken daily.

Syrup of Iodide of Iron and Manganese.—M. Burin-Dubuisson forms a solution of iodide of iron and manganese, in the proportion of one part by weight to two of water: the proportion of the salts is about three of iodide of iron to one of the iodide of manganese. Six parts of this are mixed with 294 of simple syrup; of this, M. Pétrequin gives one or two spoonfuls daily.

Pills of Iodide of Iron and Manganese.—Take of the officinal solution prepared by M. Burin-Dubuisson, 15 parts (grammes); honey, 5 parts; some absorbent powder, $9\frac{1}{2}$ parts. Divide into 100 pills. The honey and the solution are first mixed, and evaporated at first rapidly, then more slowly, to ten parts. Then add the powder, and divide the mass into four parts, which must be rolled in powder of iron reduced by hydrogen; each of these must then be divided on an iron plate into 25 pills, and again rolled in the iron powder. Finally, they are covered with a layer of tolu, according to M. Blancard's process.

All these preparations must be made very carefully. M. Burin-Dubuisson has ascertained that the commercial salts of manganese frequently contain copper, and even arsenic; he hence insists on the necessity of calcining the sulphate of manganese, twice, or more frequently, at a dark red heat, and of carefully testing the solution.—*London Journal of Medicine.*

On Eczema Impetiginodes in Children. By Dr. MAUTHNER.—Cases of variola and of eczema impetiginodes were often observed during last winter in the hospital in Vienna. The latter disease had several points of resemblance with variola. Vesicles were formed, filled with a turbid purulent fluid; these were developed into pustules; and finally desquamated. The disease promoted the develop-

ment of scrofula, where a marked predisposition existed; but it freed the body from local scrofulous affections. None of the children died. Mercurial ointment was applied on linen rags to the eyes, the labia majora, and the nostrils, to arrest the excessive development of the disease. In several cases, rigors occurred on the ninth day of the vesicles. If any threatening symptoms—as coldness of the skin; blueness and collapse of the pustules—appeared during the stage of suppuration, full doses of camphor were given with excellent effect. During desquamation, albumen was found in several cases in the urine, which was pale and generally alkaline. Traces of albumen were also observed in other diseases of children, as in typhus and tubercular exudations. In none of these cases was there dropsy. Hæmaturia occurred in one child, affected with dropsy, eczema impetiginodes, and scrofulous disease of the cervical vertebrae. This patient recovered from the urgent symptoms.

The treatment consisted in wrapping the parts affected in cotton wool,—or still better in silk wadding,—and in the administration of Fowler's solution of arsenic. Dr. Von Mauthner gave six drops daily for a fortnight to a child four years old. On the fifteenth day, diarrhœa, and cough with fever, appeared; but these left the patient in two days; and the child was perfectly cured at the end of two months. Inunction with bacon has proved serviceable in eczema furfuraceum.—*Lon. Jour. Med. from Jour. Für Kinderkrankheiten.*

SURGERY.

Cases of Recovery after Fracture of the Base of the Skull. By HENRY LEE, ESQ.—Mr. Lee gives the particulars of five cases, in which the evidence was more or less conclusive, of fracture of the base of the skull, and in which the patients subsequently recovered. Such cases have been by many surgeons supposed occasionally to occur, but for obvious reasons their real nature is not easily demonstrated. An opportunity however in one case presented itself to Mr. Lee, of examining the parts six months after a fracture of the base of the skull, and the bone was found to have become re-united.

In four of the five cases mentioned by Mr. Lee, some degree of paralysis of the nerves of the head remained after the other symptoms had disappeared. This is attributed to the influence exerted upon the nerves by the injured bones with which they are in contact. "In some cases the sheath of the nerve is probably at first only affected; in other cases the nerves themselves may be so bruised (as sometimes happens to the spinal cord in cases of fracture of the spine) as permanently to lose their power. In other cases, again, the nerves may be torn across by the displacement of the fractured portions of bone through which they run. A local paralysis or loss of sensation will then ensue, quite distinct in its origin and effects from that produced by concussion or compression of the brain. In such instances, the loss of nervous energy is not necessarily attended by any disturbance of the system. The parts to which the nerves are distributed may, however, be more or less affected as regards

their nutrition and secretion, as well as their sensations and motions. In one of the cases given by Mr. Lee, the cornea of the left eye had become opaque five months after the accident.—*Lon. Med. Journal.*

Iodine Injections in Ascite. By M. BOINET.—Notices have from time to time appeared in the French journals upon the treatment of ascites by iodine injections, some of which we have transferred to our pages. The chief advocate of the practice is M. Boinet, who has published a long memoir on the subject (*Gazette Médicale*), the completion of which has recently appeared. In this concluding paper a *résumé* of his experience is given, from which it appears that he has performed the operation in thirteen cases, eleven of which were successful. No injurious consequences followed the injection in any instance, if we may believe the reports; and one injection was generally sufficient. The deductions with which the author concludes his memoir are these;—1. That various fluids may be injected into the peritoneum without danger, and with manifest benefit, in the treatment of ascites. 2. That, of these various fluids, the tincture of iodine is indisputably the best, of which an abstract is given in the *Archives Generales*.—*Dublin Medical Press.*

MIDWIFERY AND DISEASES OF FEMALES.

On Abdominal Tumors during Pregnancy. By M. MORISSEAU. (*L'Union Médicale*).—On two occasions, Dr. Morisseau writes, I have had an opportunity of observing the result of abdominal tumors during pregnancy. More recent facts have awakened my recollection, and fixed my attention.

A woman, aged 28, married for eight months, had become pregnant four months after marriage. For several years she had a swelling on the right side of the abdomen. It was painless and movable, offering no impediment to the functions of the abdomen; but it now became adherent and painful. In the seventh month, the woman died of marasmus. For a month before her death, she had had purulent alvine evacuations; but the size of the tumor appeared very slightly diminished. The tumor was found to be filled with pus, to be adherent to the mesentery, and to have an opening into the ascending colon. The fœtus was in a state of putrefaction.

A woman, aged 30, who had had two children, became pregnant for the third time. After the second pregnancy, she had what she described as a ball in her abdomen. This tumor went on growing with the product of conception; and, in the fifth month, became so painful as to render motion insupportable. After suffering extremely for four months, in a state of marasmus, she was delivered of a small, living, skeleton-like child. Both mother and infant died a few hours after. Towards the eighth month of pregnancy, I perceived a tumor of the size of the head of a fœtus at full term, seated in the right flank, and distinct from the uterine tumor. At the autopsy, the peritoneum was found to contain a large quantity of sero-purulent fluid, with albuminous flocculi floating in it. The small intestines

were mottled and friable. Above the right ovary, the tumor raised the intestines, and was adherent to them by the whole of its anterior surface. It was divided into cells, which, for the most part, did not communicate, and was filled with a large quantity of very fetid greenish pus. The base was at the mesentery. The uterus appeared healthy.

Some time ago I was consulted in the case of a woman, aged 24 or 25 years, who had been married some months, to determine whether she could, without danger, become pregnant. She had for some years had an enlargement in the abdomen. The tumor was of the size of a large orange, painless, and could easily be moved from the right side, its ordinary position, to the left. I expressed my opinion that pregnancy would be attended with severe accidents; but different advice was given by another *confrère*, and the patient became pregnant. A month after conception, the tumor became painful, and larger. Towards the end of the second month, the patient was obliged to remain in bed; not the least pressure could be borne; obstinate vomiting and colic set in; and, for ten days, the patient was in a most precarious state. On the seventieth day of pregnancy she expelled the fœtus. For a month she remained dangerously ill, but at length became slowly convalescent, the tumor remaining large and tender.

These facts are worthy of attention. Pregnancy necessitates increased activity of circulation in the uterus and in the neighboring parts. When the uterus is developed, it impedes the flow of blood, as is proved by œdema, and varices in the lower extremities. In the abdomen, too, there is a plethoric state of the organs; hence, if a ganglion is already hypertrophied, or there be a tumor of any kind in the abdominal cavity, it will be liable to become enlarged.

Is it, then, prudent to advise marriage to a female who has a tumor in the abdomen? I have not hesitated; and would not hesitate, to reply in the negative.—*London Journal of Medicine*.

On a new mode of operating for Ovarian Dropsy. By I. B. Brown, Esq. (*Dublin Med Press*).—This operation consists in the excision of a portion of the cyst, returning the remaining portion into the peritoneal cavity, and closing the wound by sutures, thus allowing any fresh fluid secreted by the remaining portion of the cyst to escape into the cavity of the abdomen, there to be taken up by absorption, and discharged by the kidneys. Mr. Brown said this method of treatment was suggested to his mind by reflecting upon the numerous cases on record, in which a spontaneous cure has occurred by an accidental rupture of the cyst, followed by a copious discharge of urine. This mode was not considered applicable to every case, nor was it the purpose of the author to lay down any absolute rules for its use, but simply to relate such facts as had come under his observation.

Case 1.—This case had been alluded to on a former occasion, and Mr. Brown now read the notes of the case as they were taken by Mr. Bullock, at St. Mary's Hospital, where the operation was performed.

The woman, aged 47, was subject to prolapsus uteri, which Mr. Brown considered as presenting a sufficient objection to treating the case by pressure. The swelling first appeared rather on the left side, about nineteen years ago, but had increased rapidly during the last six months. The following was her condition on admission to St. Mary's Hospital, February 13, 1852:—Abdomen considerably enlarged, with shooting pains extending to the shoulders. Complete procidentia uteri, returned with difficulty. Percussion dull in front, resonant at the sides, less so on the left than the right; fluctuation very distinct, the integuments moving freely over the tumor.—Feb. 14th: Ordinary diet; porter, one pint; blue-pill, three grains; compound aloetic pill, four grains, every night, with saline diuretics.—March 6th: General health good; some fluid drawn from the cyst with a small trocar was quite clear, with only a trace of albumen and some chlorides.—10th: She was placed under the influence of chloroform, and an incision was made through the integuments, down to the linea alba, from an inch and a half below the umbilicus, extending four inches. The linea alba was then divided, afterwards the transversalis fascia, and finally the peritoneum; the cyst was then presented to view, and found to be free from adhesions. It was seized by a pair of forceps, a large trocar was introduced, drawing off about sixteen pints of fluid, leaving some fluid in the cyst, and then a piece of the cyst which appeared comparatively free from blood-vessels was excised. The external wound was closed by interrupted sutures, the ligatures including all the abdominal parietes except the peritoneum. She was ordered two grains of opium immediately, and one grain every three hours. A pad of wet lint was placed over the wound, and a broad bandage round the abdomen. Severe peritonitis ensued for the first five or six days, which was subdued completely by large and repeated bleedings from the arm, with calomel and opium. In eight days the abdominal tenderness had subsided, the abdomen became flaccid, and the urine passed exceeded in quantity the fluid swallowed.—By the 21st (eleven days after the operation), the remains of the cyst could be felt on the right side of the cicatrix, as a solid substance of an irregular form. On the 3d of April, no increase of the abdomen could be discovered, and on the 6th she was discharged. Mr. Brown said he expected that the kidneys would continue to secrete more fluid than was drunk for some time, and that the cyst would ultimately become of an indurated, perhaps calcareous character, possessing less vitality, and incapable of secreting fluid. He should feel himself bound to report to the Society any return of the disease, although he did not anticipate a relapse.

Case 2.—In this case, which had been treated nine years ago by tapping, pressure, mercurials, and diuretics, so far successfully that no return of fluid took place for seven years, the abdomen had been gradually enlarging for the last two years, and the patient was anxious for a radical cure, and sanguine as to the result of the operation of excision of a portion of the cyst. She was previously prepared for the operation by a farinaceous and milk diet, avoiding stimulants,

and keeping the bowels well open daily, under which treatment the size of the abdomen was materially reduced. The operation was performed on the 29th of March, 1852, in a manner similar to that related in Case 1. Nine pints of clear fluid were withdrawn, and a portion of the cyst excised. But it unfortunately happened that the peritoneal coat of the cyst was very vascular, and hæmorrhage ensued which was not to be subdued by torsion of the vessels. As there were no adhesions, it was determined to remove the whole cyst. A double ligature having been tightly applied over the pedicle, which was attached to the left ovary, about an inch and a half broad, and containing one large blood-vessel, the pedicle was divided, the cyst removed, sutures applied, and over them a many-tailed bandage. The case did very well, no signs of inflammation occurred, the ligature came away in four weeks, and on the day following the patient was in her drawing-room, convalescent. This case was related, as illustrating an important difficulty which might occur, rendering the removal of the whole cyst a safer practice than tying several bleeding vessels, and leaving the ligatures within the peritoneum, a source of much danger.

Case 3.—In this case the operation was performed in a similar manner to that detailed in Case 1. A portion of the cyst was excised, but a second large cyst was found, the fluid of which was evacuated, and the wound closed. An attack of inflammation ensued, which was successfully combated by bleeding, calomel, and opium, and the patient did well. The first cyst became collapsed, and could be easily felt beneath the walls of the abdomen; but the second cyst has frequently filled since; and now, sixteen months after the operation, it fills at a much slower rate, and the patient's health is much improved. Steady and firm pressure has been had recourse to after each tapping, to which Mr. Brown attributes mainly the slower filling of the cyst. This case was related to show another complication which might occur.

Mr. Brown concluded by expressing a hope that this operation may prove to be another successful method of treating this very troublesome disease.—*Lancet*.

On the Diseases of the Follicles of the Vulva By M. HUGNIER. (*Jour. des Connais. Med. Chir*).—Inflammation of the follicles of the vulva is more frequent in summer than in winter. Brunettes and scrofulous subjects are predisposed to it; but pregnancy is a special predisposing cause. Fatigue, diet, and irritant pomades also favor its production.

Symptoms.—In the eruptive period there is itching; the genital organs are more or less red and swollen, and they present here and there, especially on the genito-crural folds, on the external surface and free border of the labia majora, on the base of the envelope of the clitoris, and on the nymphæ, very small red projections, which are easily felt, and vary from the size of a pin's head to that of a sweet pea.

At a more advanced period, there is irritation and pain, especi-

ally during walking; and there is excessive secretion in the genital organs, with a strong odor. After a longer or shorter period, the follicles secrete pus. The little swellings become redder at the base, also larger and more projecting; they then become pale and yellowish; the pus then appears beneath the epidermis, and the pustules burst. The follicle may either cicatrize rapidly, or remain open, presenting a small superficial circular sore. This kind of ulceration may be confounded, if care be not taken, with those of syphilis. The pustules, when arrived at the suppurative period, do not all burst. Absorption of the pus may occur in some cases; for some time the follicle remains red, hard, and inflamed; and its central part, if exposed to the air, is covered with a small crust.

The disease may present its various stages at the same time on different follicles.

Inflammation of the follicles is not always so simple as has been described. In pregnant women, or in those predisposed by diet, fatigue, or long walking, the vulva is more or less swollen; its different parts are red, glued together, and covered with a gluey, gray, whitish, or purulent matter, resulting from the mixture of sweat, sebaceous secretion, and pus. Excoriations soon appear, chiefly on the genito-crural folds, and on the free edges of the labia majora and nymphæ. In this state the genital organs of the female, from which emanates a most repulsive odor, present such a hideous aspect, that it is easy to understand how some practitioners have mistaken the true nature of this disease, and others have believed it to be syphilitic.

Diagnosis.—In some cases, inflammation of the vulvar follicle is readily distinguished from erythema, eczema, aene simplex, erysipelas, and small furunculous abscesses; but it may be confounded with herpes, ecthyma, and especially with syphilis.

Herpes is distinguished from inflammation of the follicles, by being always preceded by derangement of the general health. It is, moreover, characterized by an eruption of robust vesicles, large from the commencement, while those of folliculitis are at first small. In herpes, the vesicles are superficial, lying beneath the epidermis; they are neither red, nor surrounded by any inflammatory areola; they burst, wither, and dry up very soon, most commonly without suppurating; when they do suppurate, the pus which they contain is rather an opaline matter mixed with serosity, giving it the appearance of whey, than true pus. When the vesicle of herpes is torn and the epidermis removed, there is a slight excoriation, without a depression, or at most with a scarcely sensible one. In vulvar folliculitis, the ulceration is deeper, but less extensive. Pressure on the follicle often causes the exudation of pus, or of sebaceous matter, sometimes both together; the lacerated vesicle of herpes gives exit at most to a little reddish or sanguinolent serosity. Herpes leaves no cicatrix; the other disease often does. And the two affections differ from each other in their progress and duration.

Ecthyma, in its simple form, has more analogy than herpes with

folliculitis. It is, however, often the result of general derangement of the health. It is never developed on the nymphæ, on the interior surface of the labia majora, or on the perineum, and very rarely in the genito-crural folds. When ecthyma attacks the vulgar, it is situated on the clitoris or free edge of the labia majora. It rarely is present alone on the genital organs; for the surface of the body generally also presents traces of it. The pustules of ecthyma are less numerous and more superficial and larger than those of folliculitis; they sooner suppurate, and are covered with a thicker yellow crust. In ecthyma, the eruption does not present successive stages. Moreover, in this disease the vulva follicles are found healthy, and there is no hypersecretion of fat and fetid matters.

Syphilis—It is chiefly with the various forms of syphilis that folliculitis of the vulva may be confounded; and this is a serious error. M. Huguier remembers with pain the case of a young married woman, weak, and in bad health, who was driven from home when about to become a mother, through a mistake of this kind, committed by the physician under whose care she was.

In some cases, errors may be committed. In the early stage of folliculitis, when the inflamed follicles form pimples which may be accompanied by a discharge from the genital organs, the disease very much resembles those mucous tubercles which present themselves at first under the form of red shining papules, more or less numerous, small and round, like the inflamed follicles. A little later, when the follicles contain pus; when their aperture remains open, and gives exit constantly to purulent and sanious matter; when the neighboring parts are excoriated here and there; when various parts of the vulva are irritated, and produce excessive secretion, accompanied with a discharge from the vagina or uterus,—it is very easy to confound folliculitis with primitive syphilis, characterized by incipient chancres and blennorrhœal discharge. The peculiar nauseous odor is almost the same in both; and in both there may be engorgement of the inguinal glands.

There are, however, certain different characters. Folliculitis frequently occurs during pregnancy; syphilis is most common when the uterus is empty. Folliculitis commonly follows much fatigue, excessive masturbation, and too frequent sexual indulgence. Syphilis is never the consequence of either of these, nor of uncleanness. With some exceptions, it only appears after a suspicious intercourse. The promotive seat of syphilis is usually at the entrance of the vagina, at the base of the anterior surface of the nymphæ; folliculitis commences indifferently on any part of the vulva. Syphilitic affections of the vulva are very often accompanied with inflammation and hypertrophy, and with fissures of the anal folds. These parts are generally intact in folliculitis; hæmorrhoids, if they exist, will not be mistaken for venereal complications. Folliculitis presents successive eruptions of pustules in various stages, which produce much less destruction than those of syphilis, the excoriations and ulcerations being always superficial or very limited. Venereal ulcerations

rapidly increase and form chancre, extending in various directions, and perhaps running together. Mucous tubercles, when of primary venereal origin, coexist with other indications of syphilis; when connected with secondary disease, the history of the case, and the appearance of other symptoms on various parts of the body, will point out their nature. Yet there may be cases, in which it will be very difficult to form a diagnosis.

Folliculitis is liable to return; sometimes it appears to be habitual. In some cases, M. Hugnier has seen it return three or four times a year.

Treatment—After removing the cause, the remedies to be employed are demulcent lotions, hip-baths for twenty minutes or half an hour, and simple or opiate cerate. Rest, vegetable diet, and a refreshing ptisan, are also indicated. If these means fail, we must apply a poultice of potato starch, covered with a piece of gauze, and bathe the parts with wine and water, or with decoction of roses, bistort, or rhatany. Cold hip-baths are also very useful. When the disease is obstinate, the parts must be treated with a strong solution of nitrate of silver, with a mixture of one part of acid nitrate of mercury in two of water, or, still better, with solid nitrate of silver, which must be held longer over the most diseased parts.

Constitutional treatment must not be neglected. If the patients are scrofulous, and the disease appears liable to return, tonics and astringents must be given. Moderate exercise and nutritious diet are also advisable. Careful attention to cleanliness, moderate diet, and occasional purgatives, are indicated for dark-complexioned patients, with a very oily skin, whose perspiration has a strong odor, and who often have pustules of acne on the shoulders.

The follicles of the genital organs are also liable to present other forms of disease, which M. Hugnier, in an essay presented to the Academy of Medicine, has ranged under the head of acne and stercoratois and sebaceous cysts of the vulva, and hypertrophy and exdermoptosis of the vulvular follicles.—*London Med. Jour.*

Conclusions derived from an Analysis of one hundred cases of Cancerous Disease of the Uterus. By ROBERT LEE, M. D.—The conclusions to which the author arrived from this analysis were:—1st. That cancer may commence in any part of the mucous, muscular, or peritoneal coats of the uterus; but most frequently in the os and cervix. 2dly. That the earliest symptoms of the disease, in a large proportion of cases, were discharges of sanguineous, serous, or white colored fluid from the vagina, with sense of uneasiness or pain more or less acute within and around the pelvis. 3dly. That cancerous disease of the uterus presented itself most frequently in the form of induration and ulceration of the os and cervix uteri and vagina, or ulceration without induration, or in the form of fungoid tumors, usually called cauliflower excrescences, growing from one of the lips or the whole os uteri, being often associated with encephaloid or colloid masses and true scirrhus of the remaining portions of the uterus and

contiguous viscera. 4thly. That in no case could cancerous disease of the uterus be referred to inflammation; and that its fatal progress was never arrested by cauterizing the morbid structures through the speculum, nor by any other method of treatment.—*Dub. Med. Press.*

On Sudden Death after Delivery. By Dr. A. FORGET (*L'Union Médicale*).—Dr. Forget observes that sudden deaths after delivery ought to be arranged in two categories: 1. Those which occur some minutes or hours after delivery; 2. Those which occur after some days or even weeks, under circumstances which would not lead one to expect the fatal event.

Of the latter kind there are three cases related by M. Robert at the meeting of the *Société de Chirurgie* on January 7th, 1852. In one of these, the woman died on the ninth day after delivery; the other two died on the sixteenth day. Dr. Villeneuve, of Dijon, has related the following case in a letter to Dr. Forget.

A young woman, aged 22, primipara, of strong constitution, had a natural delivery after a labor of forty eight hours. She was seized on the sixth day with febrile symptoms, which continued till the fifteenth or sixteenth day; after which, she appeared to be recovering, until the twenty-sixth day, when she was seized during sleep with a convulsion which caused her to start from her pillow, on which she fell back dead. The following fact is worthy of attention. The pulse of this patient, in general regular, would from time to time cease, and would then suddenly become extremely irregular, the heart exhibiting convulsive, tumultuous, disordered action. This state would occur several times in the day, lasting from half a minute to a minute and a half, and disappearing without leaving any trace. On a single occasion, this phenomenon was observed to be coincident with a slight mental impression, produced by some cries of her infant. No organic lesion in the thorax or abdomen could be detected either by percussion or by auscultation.

With regard to the cause of death under such circumstances, M. Danyau observed at the meeting of the *Société de Chirurgie* above referred to, "that death occurs always in the same manner—rapidly and unexpectedly; and that the lesions as yet appear to have escaped the investigations of pathologists." In two cases which he has recorded, there was a little serum in the pericardium in one; in the other, there was a slight fatty degeneration of the heart. Dr. Forget observes, that neither of these conditions will sufficiently explain the cases.

In deaths occurring a few minutes after labor, there are generally some premonitory symptoms, which reveal the threatened recurrence to the experienced practitioner. Thus M. Depaul has communicated the following case to the Medical Society of Emulation.

A young woman, who had had slight hemorrhage at the sixth month, was favorably delivered at the full period. A certain quantity of blood was lost, but not enough to constitute what might be

called hemorrhage. The patient went on well for about an hour, the uterus appearing to contract properly, and there being no reason for suspecting internal hemorrhage. She was then seized with paroxysms of severe pain in the hypogastrium, each paroxysm being followed by slight convulsions; at the same time the extremities and the whole surface became cold. M. Depaul, who had already seen a case of death under similar circumstances, sent for the usual medical attendant of the patient, and communicated to him his apprehensions; the latter, however, looked on the symptoms as merely nervous, and capable of being overcome by antispasmodics. The paroxysms ceased; prostration soon set in; the pulse rapidly failed, and the patient died.

An analogous case is recorded by M. Sandras.

A young woman was favorably delivered of a living infant. Two hours and a half after delivery, she began to complain of an indescribable feeling of anxiety, with gradual and rapid prostration. No cause for this could be discovered; there was no internal hemorrhage, and the uterus seemed properly contracted. In spite of all remedies, the prostration became extreme, the pulse failed, the surface became cold, and the patient died.

Dr Forget observes that, in the absence of any direct anatomical investigation of the two preceding cases, the cause of death can be only surmised. He has no doubt that the introduction of air into the uterine veins is the most plausible explanation; and he regards as inconclusive the objections to this theory, founded on the flexuosities of the vessels, and the approximation of their walls by the contraction of the uterus.—*London Med. Jour.*

THERAPEUTICS.

On the Therapeutic Properties of Arnica Montana. By M. MARTIN LAUZER.—*Contusions, Ecchymosis, Sanguineous Tumors, etc.*—The efficacy of arnica in these affections was first discovered in Germany; and gained for it the name of *Fallkraut*, or *herba lapso-rum*. It was formerly applied as a topical remedy; but at present it is more usual to trust to nature, and to employ rather camphorated spirits and saline lotions. It is not unreasonable, however, to give arnica internally after a fall, if the patient has, as often happens, undergone violent concussion amounting to stupor: but when reaction has set in, medicines of another class must be used.

Pulmonary Diseases.—Murray extols the power of arnica in a host of various diseases; and, in the first place, we have pulmonary affections, of which the names have in the present day changed: such as pain in the side with dyspnoea, false pleurisy, humeral cough removing in the summer and autumn; cachectic and œdematous cough; asthma arising from sudden chill, with rheumatism of the chest and back; asthma following delivery, with alteration of the voice and pain in the nape of the neck; peripneumonia. The tonic and stimulant properties of the arnica would evidently be far from always serviceable in these diseases, some of which correspond to pneumonia and pleurisy,

others to catarrhs. or to convulsive coughs. But, according to Dr. Roques, the nauseating properties of arnica have several times triumphed over obstinate catarrhs. In these cases, the arnica should be combined with pectoral medicines, and its use must be persevered in for some time. Arnica is no less useful, according to the same author, in cases of pneumonia of an ataxic character. In these cases, the arnica is given with extract of cinchona; this combination excites the powers of the system, reanimates the action of the lungs, and favors expectoration.

M. Martin Lauzer remarks that M. Guitrac gives large doses of tartar emetic in chronic catarrh; and Professor Broussonet and Cruveilhier give large doses of ipecacuanha in the same affection and in the pneumonia of old persons; and suggests that arnica might produce similar effects, in such cases, to those of ipecacuanha.

Arnica has been recommended by various authors in inflammation of the liver with petechiæ, suppression of the menses or lochia, uterine hæmorrhage, congestion of the spleen, nodosities of the breast, general atony, hectic fever, atrophy, calculous nephritis, and contractions of organs.

Paralytic Affections.—The writers of the last century have chiefly pointed out the effects of arnica in cases of paralysis. Juncker states, that he cured more paralyzed and contracted limbs with arnica alone, than with combinations of remedies. Collin states, that he cured tremblings, convulsions, palsies, and other nervous affections. Under the influence of this remedy, the patients had pain in the eyes, creeping and tickling sensations in the limbs, and a sense of heat; and these phenomena almost always were prognostic of benefit. These effects are precisely those produced by strychnine; hence arnica would be a succedaneum for this formidable agent; and why should it not be employed before having recourse to the preparations of nuxvomica? Collin says that, in cerebral affections, arnica is contra-indicated until the fever has ceased, or has diminished; and then nitre must be added to it. Kornbeck extols the action of arnica in mercurial paralysis: it would evidently be only useful in asthenic palsies, in whatever situation. Dr. Roger relates the case of a woman who, after fever, had a sense of weight and loss of power in the lower limbs. Under the use of powder of arnica flowers, she experienced creeping sensations and pain, followed by complete restoration of motion and sensation. According to Collin, Murray, and Conradi, arnica has also cured cases of asthenic amaurosis: but M. Martin Lauzer believes, with Schumucker, that it always fails in cases of amaurosis which have slowly gained their highest degree of intensity.

Spasms and convulsions: convulsive cough.—Arnica, according to Murray, has cured tremblings of the limbs or tongue, opisthotonos, convulsive movements of the head, and twitchings of the limbs. If these affections are nervous, of asthenic origin, and consequently calling for the employment of tonics and stimulants, arnica may be of use.

Intermittent Fever.—Collin, Stoll, Aaskow, Deiman, and Voltelen,

praise arnica as a remedy in ague. Stoll was very successful in the treatment of a quartan, which resisted cinchona. He made an electuary with flowers of arnica and syrup of orange peel; and gave a piece as large as a nutmeg four times a day. This dose caused severe pain in the stomach, and cold clammy sweats, with a large, full, and very slow pulse; but opium calmed these symptoms, which, however, were the forerunners of a rapid cure of the fever.

Typhoid Fever.—It was in the treatment of this disease that arnica enjoyed its best days; but here its fame also suffered dire shipwreck, thanks to its abuse by the Brownians, who almost used it as a specific in continued fevers. Collin said that arnica, by its cardiac power, removes stupor, somnolence, and delirium, in putrid fevers, brings back the eruption of suppressed exanthemata, and resolves metastatic swellings. But Murray judiciously adds that, in order that the desired result may be produced, we must take account of the season and of general conditions;—words full of justice, a reflection on which would have prevented the abuse of using a single remedy in a disease so variable in its form. Stoll, who introduced the use of arnica in putrid fevers, gave it only in those cases in which, the pulse remaining nearly quiet, the patient was feeble, stupefied, prostrate, in a state of somnolence, or of muttering delirium. Arnica is also particularly indicated where the pulse is small, weak, and fluttering, with torpor and prostration of the muscular system. Dr. Roques says that it should be used especially in the enervating diarrhœa, in the obstinate dysenteric flux which, in the third stage of typhus, threatens to entirely destroy the vital powers. Murray recommends it, combined with camphor, when gangrene has supervened on other adynamic symptoms.

In the campaigns of the empire, the good effects of arnica in the army-typhus have been observed and recorded. Dr. Cazin, who used it successfully in the army hospitals during the campaign in Germany in 1809, has since that time frequently employed it in the adynamic stage of typhoid fevers, combining it with the roots of valerian and angelica, which dilute its emetic and cardialgic properties.

Gout.—Barthez has recommended arnica in the treatment of gout. Dr. Roques was of opinion that the best treatment of gout is to torment the patient as little as possible with medicine.

Summary.—Arnica is an energetic excitant, which is far from meriting the oblivion into which it has fallen. Its tonic, excitant, and emetic action, allies it to ipecacuanha; and the nervous symptoms which it secondarily excites, give it some relation to the preparations of nux vomica. Gilibert considered it tonic and aperient in small doses; and in large doses emetic, purgative, diuretic, sodorific, and emmenagogue. When given alone, it is liable to produce more less severe pain in the stomach. This may be prevented or assuaged by combining the arnica with a small dose of opium or some aromatic, such as angelica, canella, or ginger. But if its nauseating effects be desired, it must be given alone.

Doses and Modes of Administration.—The *infusion*, according to

the formulary of the hospitals of Paris, is made by infusing for an hour a drachm of the flowers in a quart of water, and straining. The *decoction* is made with the same proportions: it is more powerful. The dose of the infusion may be as much as an ounce, sweetened with syrup.

The *powdered flowers* may be given in doses of from ten grains to three or four drachms, in electuary or bolus; this form is preferable in cases of paralysis. The *powdered root* may be given in the same manner.

The dose of the distilled water is from an ounce and a half to three ounces of the alcoholic tincture (one part of the root to eight of alcohol) from fifteen minims to five drachms; of the ethereal tincture (one part of flowers to four of ether) from fifteen minims to two and a half drachms; of the aqueous extract (one part to five of water) from seven grains to a drachm, in a draught or in pills; of the alcoholic extract (one part of flowers to eight of alcohol and one of water), the same quantities.

For external use, the leaves and flowers may be used as a poultice: and the powder may be employed as a sternutatory.

Compound infusion of arnica flowers. (Roques).—Take of arnica flowers, valerian root, each two drachms; infuse them in a closed vessel with half a pint of boiling water; then strain, and add, of peppermint water two ounces, simple syrup one ounce, ether a drachm, tincture of opium from fifteen to twenty drops; to be given by spoonfuls in the adynamic period of typhoid fevers.

Compound preparations of arnica.—The above-named preparations are advantageously combined with wine, cinchona, camphor, and valerian.

Compound powder of arnica root. (Roques).—Take of arnica root in powder fifteen grains; camphor three grains; to be given every three hours in dysenteric typhus, to combat the prostration of the vital powers.

Stimulant bolus.—Take of camphor, arnica flowers, and treacle, each fifteen grains; divide into twelve boli, and give one every hour.

Stimulant electuary.—Take of powdered arnica root an ounce and a half, crude opium three-quarters of a grain, syrup a sufficient quantity. Divide it into six doses; one to be given every two hours in cases of purulent absorption.

Aromatic tincture of arnica.—Take of arnica flowers an ounce and a half; cloves, canella, and ginger, each two and a half drachms; anise, three ounces; alcohol, a quarter; macerate for eight days, and strain. A spoonful in water two or three times a day in contusions.
—*Lond. Journ. Med.*

OBITUARY.

DEATH OF JOHN DALRYMPLE, ESQ.—On the 2d of May last, at his residence in London, of phthisis; aged 48. He was surgeon to the London Ophthalmic Hospital. In 1834 he published his work on the *Anatomy of the Human Eye*, which, it is said, was “the first complete and comprehensive work on that subject in the English language.” The work, however, upon which his fame as an author will rest imperishable to all time, is his great work on “*The Pathology of the Human Eye*.” “It is singular that neither the originator nor completer of this publication should have witnessed its final success. The late John Scott had brought together a valuable collection of sketches, with the intention of publishing a work on the pathology of the eye. His failing health prevented this; and at his death he bequeathed to his friend and colleague, John Dalrymple, his collection of drawings, knowing his ability to execute this favorite project. Mr. Dalrymple died after the completion of the plates and MSS., and while the text was yet passing through the press. “Had it pleased the Supreme Being to spare Mr. Dalrymple’s life a few short months longer, the chorus of praise which now greets the completion of this great work would have fallen gratefully on his ear. But it was otherwise ordained; and the gladness of this event has been darkened by the shadows of the author’s tomb.”

DEATH OF PROF. WILLIAM THOMPSON, M.D.—On the 12th of May last, at Edinburgh, suddenly of disease of the heart; aged 49. He was Professor of Medicine in the University of Glasgow. Dr. F. was a man of extensive learning and varied accomplishments. His principal works are, *A Treatise on Diseases of the Liver*; *a Memoir on Coal Mines’ Phthisis*; and a *Biographical Sketch of his Father*.

DEATH OF JOHN P. VINCENT, ESQ., F. R. C. S., formerly Surgeon to St. Bartholomew’s Hospital, at his residence, Woodland’s Manor, near Wrotham, Kent, suddenly, on the 17th July last; aged 74. Mr. Vincent published, in 1847, his “*Observations on some parts of Surgical Practice; to which is prefixed an Inquiry into the Claims that Surgery may be supposed to have for being classed as a Science*.” This (says the *London Journal of Medicine*) we believe was his only literary production; and is one from which we have derived much valuable instruction. It is the work of a practical surgeon, unwilling to obtrude himself on the notice of the profession, until his experience had given authority and weight to his words.

DEATH OF PROF. RECAMIER—Suddenly, of pulmonary apoplexy, lately at Paris; aged 77. To him is due much of our knowledge of improvements in the surgery and therapeutics of uterine diseases. His treatise, entitled *Recherches sur le Traitement du Cancer*, &c., has done much to extend his reputation and perpetuate his fame.

PART FOURTH.

COMMUNICATIONS

AND

AMERICAN MEDICAL RETROSPECT.

COMMUNICATION.

Case of a Child injured by Lightning. Remarks on "Coup de Soliel."

MR. EDITOR:—On Thursday, July 10, 1851, at about 3 o'clock P. M., I was summoned in great haste to see a child (a little girl), of Mrs. W——, about four years of age, residing at No. 115 Franklin-st., who, it was said, had been struck by lightning. I at once obeyed the summons, and found the child presenting the following symptoms: Total insensibility; respiration as in a quiet, deep sleep; the entire surface was cold, and of a livid hue; the hands were firmly clenched; the temporal and masseter muscles so rigid, that the jaws could not be separated; a spasmodic and tremulous motion of the right arm and leg; the action of the heart, and carotid arteries, were very feeble and intermittent; and the pulsation at the wrist had entirely ceased.

Treatment.—I placed the child in bed, and applied cold water, freely, to the head, neck, arms, and chest; hot mustard foot-bath; cataplasma sinapis over the precordia and abdomen, and upon the legs and ankles; together with frictions. As soon as the jaws could be opened (which was about half an hour), and she could swallow, I administered stimulants, as brandy, ether, ammonia, &c. It was six or eight hours before the system was restored to its natural temperature. Consciousness returned in about twelve hours; but it was twenty-four hours before she could speak, and six or seven days

before she could articulate distinctly. Perfect restoration was the result.

On the afternoon above mentioned, a violent thunder storm passed over the city, and the lightning struck a tree in St. John's Park, which is about three blocks distant from the house. From the mother of the child I learned the following facts:—she was sewing, and sitting near the window, the lower sash of which was raised; and the child and her little brother, two years of age, were playing near her, and standing up. At the moment of the flash, the child fell insensible upon the floor. Her little brother was not affected. Mrs. W——— felt the shock severely, but was not prostrated by it. Besides these three persons already named, there was a young lady in the room, but she was not harmed.

Pathology.—In this case, there was a partial paralysis of the organs of organic life; and a complete paralysis of the organs of animal life, excepting those of the hands and jaws, and even these were partially so. The result in this case has convinced me that, not only was I right in the course of treatment, but, probably, correct in my view of the pathological state of the system, upon which my plan of treatment was based.

In connection with the subject of paralysis, let me say a word in relation to the pathology and treatment of that very fatal disease, "*coup de soleil*," or sun-stroke. It consists, I believe, in paralysis, more or less complete, of the pneumogastric nerve; believing this to be the case, the treatment must be such as will produce an action in the organs so paralyzed, and this result, I think, will best be secured by the administration of stimulants, as brandy, ether, ammonia, &c., internally; and friction, and counter-irritation, as with cataplasma sinapis, &c., as in the case above named. Within the five years last past, I treated thirty-five cases, upon the above-named plan, a number of which were pulseless at the wrist, when I first saw them; and I have not, as yet, lost my first patient in this disease.

The results, under any course of treatment, could not have been more satisfactory. I believe it will not be disputed, that a large proportion of those who are bled, in this disease, die, and I look upon bleeding, almost, as it were, signing the "*Death Warrant*" of the patient. In a word, avoid blood-letting, and resort to stimulants internally, and friction and counter-irritants to the abdomen and lower extremities; and cold water freely applied to the head and thorax.

I feel confident that the most gratifying results may be expected from the above-named course of treatment.

J. SAGE KILBOURNE, M. D.

PATHOLOGY AND PRACTICAL MEDICINE.

Two Cases of Sudden Death during Anæsthesia—DR. FOLTS' CASE.—Henry Keyser, a German by birth, aged 17, was brought to my office, Aug. 6th, about noon, for surgical aid. The middle finger of his left hand had been caught in the gearing of the machine at which he was at work; the last phalanx was carried away and the soft parts badly lacerated and torn. It was thought best to remove a portion of the next phalanx, so that when the mangled muscles, ligaments, &c., should be removed, the extremity of the bone might still be covered. The young man looked pale, and appeared to suffer great pain; but beyond this I observed nothing unusual in his appearance—and saw no reason why ether might not safely be administered, and the further infliction of pain obviated. I made the proposition, and he at once began to inhale a mixture of chloric ether and chloroform. There was about ten per cent. of chloroform contained in the mixture. The inhalation was continued for about four or five minutes, with now and then an interruption by his pushing the sponge away with his hand. Appearing insensible, the operation was commenced, but the first stroke of the knife made him start with a loud expression of pain. He began to vomit, and now sensibility was in a great measure restored. The sponge, replenished, was again applied, and he complained of its making his lips smart. I at once removed it and applied ol. oliv. The sponge was again applied over the nose and mouth, and inhalation carried on as before, and for about the same length of time as at the first attempt, or it may have been a minute or two longer. He again appeared unconscious; and to prevent his waking up as before, I gave the sponge—now containing very little ether—into the hands of Mr. Merrill, directing him to hold it still over the face; but there was again retching and an attempt to vomit, from which cause he but illy succeeded in retaining the sponge as directed. I again commenced the operation, Mr. Venner, who came with the young man, holding the hand.

Up to this time, there was observed nothing remarkable either in his general appearance, the pulse, or the respiration. I had made only two incisions, and was attempting to tie the outside digital artery, which was bleeding, per saltem, showing that up to this moment the circulation was good, when my attention was directed by Mr. Merrill to the appearance of the patient. I saw at once that he was either dead or dying, and directed my assistants to help me lay him at once on his back. I sent one of them for medical counsel, whilst the other assisted me in applying restoratives. I found the pulse at the wrist gone, the action of the heart very feeble indeed, and respiration in a moment ceased. But by the application of strong ammonia to the nose, dashing ice water over the head, &c., he again began to gasp, and was breathing convulsively when Dr. Parcher arrived. But a few heaving inspirations, at long intervals—the action of the heart meanwhile growing more and more feeble—and all was quiet. My patient was dead. Dr. Parcher assisted me in the diligent application of the usual means for resuscitation in cases of suspended animation—but all to no purpose, the vital spark had fled.

I regret that I am unable to give the post-mortem appearances of the internal vital organs, the friends objecting to an autopsy being made. And yet I very much doubt whether the knife would have revealed any thing new. Such, then, are the facts in this unfortunate case. I had read of deaths from chloroform, but had hoped never to have seen one. A coroner's inquest was held at my request over the body of the deceased, a few hours after death, and the jury returned a verdict in accordance with the facts above stated.

But the question will arise in the minds of all who may read this article, how was death caused in this particular case? Was it owing to an impure article used? Was it unskilfully administered? Or was there something peculiar in the organization of the patient, or the state of the nervous system, at the time, rendering this agent toxic with whatever precaution used? That the last position is the true one, is my honest conviction.

On the first question, I have only to remark, that both the chloric ether and chloroform were obtained at W. B. Little's apothecary store, on Hanover-street, where I have usually supplied myself for several years past. And in addition I can state this important fact, that from the same bottle I had administered the ether in a number of cases previously with the usual effect. And, furthermore, the mixture in the phial, containing the small per cent. of chloroform mentioned, had been tested only a few days before, in a case where a similar operation on a finger was required. This patient inhaled from two to three times the quantity that Keyser did, with the happiest effect, and walked home after the operation.

Secondly, I would remark that I have habitually used anæsthetic agents in my practice since their first introduction in this city, and never before witnessed any alarming or injurious effect from their use. At first I employed sulphuric ether; then, for nearly two years, chloroform exclusively. But finding that, according to the experience of others, ether seemed more safe, I have for almost two years relied upon this agent in obstetric and surgical practice, using chloroform only in cases where the ether appeared not to induce anæsthesia very readily. My plan of administering these agents has been uniform. I have never used an inhaler of any kind whatever. The sponge is the only article I have ever used, unless it was the handkerchief or napkin in a few instances when no sponge was at hand. I have always made it a point to admit an abundant supply of atmospheric air into the lungs, and when the patient complained of suffocation, permitted him to push the sponge away for a few moments, and then go on with the inhalation. The sponge I used the other day is of small size, not holding above two fluid ounces, and was seldom filled beyond half its capacity. It is the same sponge that I have used for more than five years, and is so open that, of itself, it is no obstacle whatever to respiration when placed over the mouth and nose.

In regard to the quantity used in the present instance—the phial had on it an apothecary's label; and, before moistening the sponge, the fluid did not reach the lower edge of said label. This fact was remark-

ed by Mr. Venner as well as myself, and there still remains in the phial nearly one ounce of the fluid. In the opinion of the physicians—Drs. Parcher and Thorndyke, who were on the inquest—the quantity used was about two ounces or a little over. By weight it may have been more.

Finally, I learned from the mother of the young man, that he had never been sick, but had been a child of penury and want, suffering at times for the necessities of life; also that he had met with an accident some years since, on account of which he lay in a fainting condition for some time. One of the men who came to my office with him, but who passed out as I came in, told me, the day after, that he “had no doubt but that Henry died from the effects of fear;” that he trembled like an aspen leaf when he was coming from the shop. We all know what a terrible influence *fear* has over the vital economy. Why, a friend of mine mentioned, in connection with this case, that he once knew an artisan, who died in this way without taking ether. His knife slipped in his hand, and he *thought* he had inflicted a serious wound on his thigh. He swooned away, and all efforts to revive him were unavailing. The surgeon found only a slight scratch of the skin—but his patient was dead!

My conclusion, then, is, that the fatal consequence attending etherization in the present instance is not owing to any inferiority in the article used, to want of care in its administration, nor to any organic disease in the patient; but that we must look for it in the naturally delicate organization of the subject, rendering him very sensitive to external impressions, in the shock that the nervous system had sustained in the injury, and last, but not least, in the influence of *fear*. Not in any one of these singly, but in the three combined.—*Boston Med. & Surg. Jour.*

DR. HAYNES' CASE.—*May 19, 1852*—I was called to the neighboring town of Hookset, N. H., to remove a tumor from the thigh of a girl aged 12, the daughter of Mrs. B. On my arrival I found the patient somewhat excited, as most children are at that age when the knife is to be used or even any small operation is to be performed. After waiting about thirty or forty minutes for the attendance of the family physician, who I afterwards learned with regret was absent from town, with the aid of a student, who is a good assistant, I proceeded to administer the ether on a sponge. The patient was placed on the side of the bed, sitting in an upright position, supported by proper assistants; and while one hand was on her wrist, with the other I gradually applied the sponge to the nose and mouth, withdrawing it from time to time as I deemed proper. After continuing in this manner for about ten minutes, amid the struggles of the patient, and perceiving but slight anaesthetic effects, I withdrew the sponge entirely, and after a short interval had elapsed, commenced the application again. In about ten minutes more the patient began to be affected, and soon dropped her head upon the shoulder, when she was placed in a convenient position for the operation; but the moment I took hold of the limb, she was again sitting upright. Again

I administered the ether as previously, and until the head dropped as before. The first stroke of the knife, however, roused the patient so much that it became necessary to restrain her, and at the same time I directed the sponge to be applied until she should cease to strive. In about three minutes the struggles ceased, the sponge was withdrawn, and in five minutes more the tumor was removed. At this time the pulse and respiration, which had hitherto remained good, told me that all was not right. Immediately we commenced giving stimulants, applying ammonia to the nose, dashing water on the face and chest, rubbing and elevating the extremities, exciting artificial respiration, and using all the means recommended in such cases, but without avail. The respiration became more feeble, the pulsations of the heart hardly perceptible, and continuing in this state fifteen or twenty minutes, she died.

I have been in the habit of administering the chloroform and chloric ether, ever since the discovery of these anæsthetic agents, in all operations of any magnitude, and have never seen the least injurious effects result before the present instance. Why this case should terminate thus, having used all necessary precautions, I am unable to divine. On my way to the patient I procured of a respectable apothecary $\frac{3}{4}$ ij. of concentrated chloric ether, $\frac{3}{4}$ ss. of which remained after the operation. The girl was below the medium size, in her usual but impaired health, of scrofulous diathesis, and had had an attack of paralysis some two years since, which left one arm nearly useless. I stated to the friends the danger, cited cases of fatal occurrence in the administration of this potent agent, and left them to decide, at the same time giving my influence in favor of its use. I have since used and shall continue to use this valuable agent, notwithstanding I have met with this unfortunate case.—*Ibid.*

On Painful Tubercle, with a Report of two Cases, with dissection, which tend to show that the affection is not Neuroma or enlargement of the Nervous Tissue. BY PROF. F. H. HAMILTON.—I do not remember to have met with more than the two following cases of "painful tubercle," and as the tumor is exceedingly rare, and its pathology does not seem to have been generally understood, I shall claim for its consideration some space.

CASE 1.—I. L. D., aged 26; from Fayette, Seneca county; in good health. Nine months since, he first discovered a small hard tumor on the back of the left shoulder, immediately under the skin. It was then, and has been ever since, extremely sensitive. Four months since, it was accidentally hit, and the pain was intense. It will not bear even the chafing of his clothes without pain. It never has been inflamed. It is now about the size of a large pea; hard, irregular, of a brownish color, and movable.

I removed it by excision, cutting away the cellular texture freely about it. I could not discover any nerve or other vessel communicating with it, or passing through it. Its texture was firm and fibrous.

CASE 2.—Hannah Duchett, aged 25 years; healthy. About five years since, she began first to feel a “deep” pain, at a single point, on the fibular side of the calf of the right leg. The pain was then, and has always been since, paroxysmal, occurring at first at intervals of a month or so. The sensation was like electricity, shooting from the point, as a focus, in several directions up and down the leg, but not extending usually farther than four or five inches. Such was the pain, so peculiarly diagnostic of the “painful tubercle.”

All this preceded the existence of any tumor, or of any mark by which the spot could be designated; and it was not until a year ago that she first began to perceive a very small, hard tumor, at the point of suffering.

The tumor has now attained the size of a large pea; the skin is slightly elevated, but not discolored. Upon the centre of the summit of the tumor is a small black spot, of the size of the point of a pin, which looks like the obstructed lacuna of one of the cutaneous follicles. The tumor is hard, and slightly movable. It is exquisitely sensitive; the gentlest brush producing a severe pain. The pains are still paroxysmal, but recur almost daily and often many times during a single day.

May 3, 1852.—I excised the tumor with a considerable amount of cellular texture around it.

Examination of the Product.—The tumor lay imbedded upon the under surface of the skin, in which it had formed a cup-like depression, but to which it had no attachments except a very loose cellular. The skin over it, was reduced to less than half its usual thickness. The most careful dissection, aided by a glass, on all sides of the tumor, did not disclose the smallest filament of a nerve, or any thing except the same loose cellular texture.

It was covered with three investments, formed, as I have usually found them in non-malignant tumors occurring in cellular textures, only that the number is sometimes greater, viz., *first*, a tunic formed of condensed cellular texture, the result of the gradual encroachment of the tumor upon this texture; *second*, its immediate and proper investment, which was more dense and pearly; *third*, loose flocculi, or delicate cellular structure uniting the two.

The tumor was firm and elastic. When cut it looked to the naked eye semi-cartilaginous, or firm gelatiniform. With the eye-glass small white spots were visible, but no fibres. Its color was very white.

Dupuytren, in his oral lectures, first demonstrated that such tumors were not neuromata. The symptoms and pathology are explained by him in a manner so graphic that we need, I think, never be in doubt; yet it will be seen, that very few have observed his distinctions; and it is for this reason that I have thought it proper to give these cases so much in detail, as additional confirmations of the correctness of his opinions.—*Buffalo Med. Journal.*

Remarkable Case of Precocity—Menstruation established at four years of age. By CHAS. R. KEMPER, M. D.—A servant girl, owned at this time by Mr. C. M. W., of Woodville, Rappahannock Co., Va., is the subject of a precocious development of the female reproductive organs and appearance of the menses. The development of the general system in this girl, from a year old, was noticed to progress rapidly, till she attained her third year, when an increased size of the mammary glands was first observed, and, shortly after, there appeared the usual growth of hair on the pubes. When she was four years and one month old, her catamenia made their first appearance, and have continued regularly to return up to this date. She is now just entering her thirteenth year.

The development of the brain seems not to have kept pace with the physical growth, but she is possessed of a degree of intelligence usual for her age. She is much larger than an older sister, and has the appearance, from the breadth of the chest and pelvis, to be a fully developed woman.—*Stethoscope & Va. Med. Gaz.*

On the Diseases and Climate of California. By JAMES BLAKE, M. D., F. R. S.—During the months of October and November, 1850, the principal diseases were dysentery and diarrhœa: 85 per cent. of the cases I attended, during these months, were of that nature. The dysentery was of a very untractable character, wearing the patient down by frequent bloody discharges, and even when checked being constantly reproduced. It was very fatal; in the absence of any positive data, I believe about 30 per cent. of those attacked died. The great mortality was not so much owing to the virulence of the disease itself as to the peculiarly unfavorable circumstances in which those attacked by it were placed. By far the larger part of the sick, probably 90 per cent., consisted of emigrants who had just crossed the plains, having accomplished a journey which, at all times fatiguing, was in the year 1850 attended with the most trying circumstances. By far the greater number of emigrants who arrived here in autumn had not only been broken down by fatigue, but had been forced to subsist on a short allowance of food, and that frequently of a bad quality. Under these circumstances, it is not surprising that the first opportunity that was afforded them for satisfying their appetite should have been made an occasion for overloading the stomach, and thus producing diarrhœa. The sudden change from the dry, bracing atmosphere of the interior of the continent and the mountains, to the comparatively heavy, warm air of the valley, exerted a most depressing effect on the system. On this point I can myself testify; for, although without any apparent sickness, yet for the first three weeks after my arrival in the country, from crossing the plains, I was so prostrated that I could lie on my bed during the whole day, without the slightest energy, either physical or mental, and many of my friends were affected in the same way. Disease, I believe, is often brought on by men attempting to work while in this state of prostration. The diet also, was a fruitful source of disease, not only as regards its quantity, but even its quality. The only

fresh meat to be had was beef, and this was generally fried, or rather boiled in rancid lard; the flour was to a great extent damaged, and the butter and salt meat were all more or less rancid. I state these facts to show that, although diarrhœa and dysentery prevailed here to so great an extent, and so fatally, during the fall of 1850, the causes of its ravages are to be looked for principally in the unfavorable circumstances in which the population was placed, rather than to any malarious influence. But not only were these circumstances fruitful sources of disease, but they presented an almost insurmountable obstacle to recovery, even when the more violent symptoms had been subdued. There was no such thing known here as that valuable hygienic remedy called nursing. From the toast water of the sick room your patient had to go back to the beef, salmon, and rancid grease of the boarding-house. There were none of those light and valuable edibles which gradually lead the invalid by a safe path back to his ordinary diet. Relapse after relapse occurred, and it wanted but little assistance from the diarrhœic influence which generally precedes the appearance of cholera, to produce a state of gastro-enteric disease among four-fifths of the newly arrived population.

In this state of the general health, the cholera made its appearance about the beginning of November, and never did it fall on a population so prepared to yield to its ravages. Although it is impossible to obtain any accurate data as to the number of its victims, yet I am confident that, during the few days at which it was at its height, not less than one per cent of the population was daily carried off by it. There was nothing peculiar in the disease as it occurred in this country; its apparent virulence can be accounted for by the previous state of those attacked. The tables appended, showing the returns from the State Hospital in this city, prove that, even during the summer and autumn months, there is very little tendency to gastro-enteric disease, at least when the exciting causes above alluded to are absent.

The diseases more particularly characteristic of the winter months are typhus fever, rheumatism, erysipelas, and pneumonia. The cases of typhus that came under my care were of a mild form, although generally lasting from fourteen to twenty-one days. In none of the cases which I treated did any unfavorable symptoms present themselves. The treatment was purely expectant, with the exception of quinine or bark, and stimulants towards the latter period of the disease. In two instances the red-colored spots were noticed on the sixth day of the disease. From the returns of the State Hospital, it would appear that this disease was prevalent during the autumnal months of last year, and the mortality was 39.7 per cent., a decidedly large mortality. Only three cases were admitted from the city, the others being brought in from the country.

The cases of pneumonia showed themselves soon after the first rains, and could generally be traced to exposure, to wet and cold: they were very amenable to treatment. But three cases came under my care, and in every case the patient made a rapid recovery, the time of treatment averaging nine days.

Rheumatism was one of the most common diseases during the winter months of '50 and '51, attacking principally those who had been previously affected by diarrhœa and dysentery; and in these it generally presented itself with very troublesome, and in fact alarming symptoms. The disease was generally of a low type, and in every case that came under my care was accompanied by inflammation in the muscles, or at least in the aponeuroses; this inflammation was the principal and most distressing symptom. In two of these cases suppuration took place; in one subject, in the calf of the leg, under the gluteus maximus and under the trapezius; and, in the other, in the calf of the leg. In three other cases that I treated, these swellings were present in the calf of the leg, and although I was led strongly to suspect that pus had formed, yet they recovered without any abscess being opened. Pericarditis existed in three cases, but, notwithstanding the unfavorable character of the general disease, this complication did not present itself in a severe form. One of the cases terminated fatally, that in which matter had formed so extensively. I believe the case would have been saved had it remained under my care; I was, however, superseded by an herb doctor, whose first care was to bind up the abscess as tightly as possible to prevent the discharge from weakening the patient. The treatment adopted the administration of colchicum and quinine, and sometimes sulphate of iron; recovery was slow; the average time of treatment being forty-one days. I had an opportunity of seeing some other cases in which the same symptoms showed themselves. Rheumatic affections are not so common amongst the mining population as we might be led to expect, from the exposure to which they are subject, working, as too many of them do, for hours at a time in the water, and also frequently exposed to rain. But very few cases of this disease have been admitted into the hospital during the past year, and this is probably owing to the absence of diarrhœa and dysentery, which seem to exert a peculiar influence in predisposing the system to rheumatism.

Erysipelas is a disease which has been extremely fatal in the country during the last twelve months; but it has existed to a greater extent in the mountains than in the valley. During the course of last winter, five cases came under my care; in all of these, the head was the only part involved, with the exception of one in which the inflammation spread to the shoulder and chest; three of these cases occurred in the same house, and the first case that showed itself was in a man who had been living in another house in the country, where there was a case of the disease. The most striking peculiarities of these cases were the inflammation of the mucous membranes communicating with the natural openings, and the absence of that amount of general and cerebral disturbance which so often renders erysipelas of the head a formidable disease. In every case, the mucous membrane of the mouth and fauces was inflamed; in four cases there were ulceration and discharge of fetid pus from the nostrils; in three cases, the palpebral conjunctiva was severely affected; and, in four of

the cases there was a discharge of pus from the ears. And yet, notwithstanding these symptoms, the cases in which they presented themselves were attended with as little cerebral and general disturbance as any I have ever seen, in which the head was involved. The fever never rose high, nor was depletion required in any case. A dose of blue pill and castor oil, and then quinine, combined with small doses of blue pill and rhubarb, was the treatment usually adopted. The only case that terminated fatally was a man of intemperate habits, who died from a complication of the disease with pneumonia. The average duration of the treatment was nine days. This disease is of frequent occurrence in the mountains, and I have seen many cases of it during the summer. The localities where it mostly prevails are the deep valleys in the mountain districts, which are shut in on all sides by high hills, where the extremes of temperature are great, and the air has a tendency to become stagnant. In some of these places it has proved extremely fatal, the mortality being more than fifty per cent. This large mortality is to be accounted for partly by the intemperate habits of many of the subjects attacked by it, but also in a great measure, I believe, from the too general use of calomel, and from not giving quinine and tonics at an early period. In two of the cases that came under my care, granular conjunctivitis remained as a sequela of the disease, and I have seen some very severe cases of this affection that have been produced by it.

Diseases of the air passages are extremely rare. A mild form of catarrh showed itself apparently in an epidemic in February, 1851, and the same affection is occasionally met with during the winter months; but I have not yet seen a case of acute bronchitis, and the experience of many of my medical friends in the city is to the same effect. This is probably owing to the absence of cold dry winds during the winter months. Very few cases of phthisis are met with, considering the circumstances in which so large a portion of the population is placed, and which in other climates could not fail to develop the latent germs of this disease which exist in so many individuals. Speaking from my own limited experience, it is more amenable to treatment here than in any other country in which I have practised. Two cases of the disease in an early stage have come under my care, occurring in individuals who had a strong constitutional tendency to it; in each case, hæmoptysis to some extent had occurred, and that partial solidification of the lung, indicated by the prolonged rough expiratory murmur, evidently existed. One of these cases has apparently quite recovered, the individual having enjoyed good health for some months. The other case is improving, having gained six pounds in weight during the last month; cod-liver oil, with quinine and iodide of iron, has been the remedy used. It is an interesting fact that in neither of these cases was any marked symptom of bronchial irritation present, and I believe the exciting cause of the disease had, in each case, been improper diet, or living too long on salt meat, which probably was rancid. A better diet was ordered, and strictly adhered to; and it is the advantages derived

from this, and also from the complete absence of any source of bronchial irritation, that have rendered the disease so amenable to treatment. Many cases prove fatal, as well here as elsewhere ; but I believe that the climate of this country presents advantages such as are not to be found in any other part of the civilized world, for the treatment of phthisis in its earlier stages.

The diseases arising from malaria might be expected to be very prevalent in the valley of the Sacramento, containing, as it does, thousands of acres of lands subject to annual overflow, and from which there is no escape for the water except by the slow process of evaporation under the rays of an intensely hot sun ; yet, notwithstanding this, cases of intermittent and remittent fever are comparatively rare in this part of the valley. A few mild cases of intermittent fever occurred in the neighborhood of the city last spring, but they appeared to be confined to low localities which were situated in the immediate vicinity of stagnant water. I have heard of but two cases of congestive fever, and both of them on low bottoms near the American River, about three miles from the city. As a general rule, the city is exempt from any of the more violent forms of malarious disease ; a few mild cases of intermittent and remittent fevers occur, but they are comparatively rare. The whole number of cases admitted into the hospital in this city, which originated in Sacramento, was twelve during the last summer and autumn. But, although the influence of malaria does not show itself by producing any of the more marked forms of disease by which its presence is usually manifested, yet we have constant indications of its existence, by the character it impresses on almost every form of disease occurring in this locality. It would appear that, when in the usual state of health, there are very few individuals in the community who are susceptible to its influence, but when the resisting powers become weakened by any form of disease, the malarious influence then makes itself felt, modifying to a greater or less extent a very large amount of the cases of other diseases. This influence it is often difficult to detect ; it is not manifest by any marked symptoms of intermission or even remission, but can only be suspected from the apparent obstinacy of the disease, and from the effects of treatment. Dysentery, diarrhoea, erysipelas, rheumatism, chronic gastritis, and even pyrosis, cases in which the remedy might appear to be strongly counter-indicated, were benefited by the use of quinine, and, in fact, would not yield without it. This modified existence of malaria, in a locality where the elements from which it is generated surround us on every side, is probably to be accounted for by the dryness of the atmosphere during the hottest months in the year ; to the moderate temperature that generally prevails, when the amount of humidity in the atmosphere would favor its propagation or diffusion ; to the prevalence of constant breezes during the summer months ; and to the coolness of the nights, which conduce to refreshing and invigorating sleep.

As regards the number of cases of bilious remittent reported to have been admitted into the hospital, I believe they were for the

most part cases of the mildest form of remittent fever. I understand from many medical gentlemen who practised here during the summer, that they did not see a single case of bilious remittent, and the short time the patients remained in the hospital (on an average eight days)* would indicate a very mild form of remittent fever. From the most accurate information I could acquire (for no records are kept), the greater number of the cases came in from the upper part of the valley, more particularly above Marysville. Scrofulous diseases are rarely met with, and I believe the climate will be found to offer the most favorable conditions for the prevention and cure of this class of diseases.

Diseases of the skin are rare; eczema is the only one I have met with. Onychia is common among the mining population, and slight wounds on the hands are very apt to prove troublesome; this is probably owing to the nature of the diet, for even when wholesome articles of food can be obtained, they are generally spoiled by boiling them in rancid grease. The quantity of rancid grease and salt meat eaten in this country with apparent impunity offers but a poor confirmation of the views of Liebig, of the injurious effects of partially decomposed substances on the animal economy.

Diseases of the nervous system are not very common, although I believe forming a larger proportion in comparison to the whole amount of disease than in the Atlantic States. A very large number of cases of insanity have occurred, thirty-eight insane patients having been received into the hospital from May to December. This prevalence of insanity is undoubtedly owing to moral more than to physical causes, although the extreme dryness of the atmosphere during the summer undoubtedly renders the nervous system peculiarly excitable. There is one fact with which I have been struck whilst travelling in the mountains during the last summer; viz., the rare occurrence of *coup-de-soleil*. It might be supposed that the miners would be peculiarly liable to this disease, exposed as they are for hours to the burning rays of the sun, and frequently with their feet in ice cold water; yet I have never seen or even heard of an instance of sun-stroke, although the rays of the sun are certainly more powerful here than in most of the Atlantic States.

The climate in the mining regions very much resembles that of the valley, and it is necessary to ascend some distance in the mountains before any marked difference is noted, even in the temperature. I have no correct data on this point, but the state of vegetation would indicate that there cannot be much difference in the temperature. When I left Placerville (about sixty miles south of Sacramento), three weeks since, or in the middle of February, the young shoots of the buckeye were three inches long. The masonceta (a species of erica) was in full bloom. The humming birds were build-

* In drawing up this average, three cases were excepted in which the patients remained in the hospital thirty-seven, fifty, and sixty-four days, and in which there was undoubtedly some complication.

ing their nests, and I believe vegetation was quite as forward, and, perhaps, more forward than in the valley. This was at an elevation of two or three thousand feet above the valley.

The mining regions are generally extremely healthy, with the exception of those localities which are situated in deep valleys surrounded on every side by high hills. Here the extremes of temperature are very great. As a general thing, the nights in summer are calm, and the great radiation that takes place under a perfectly clear sky rapidly cools the layer of air in direct contact with the ground. This cold air can be felt running down every gully and ravine leading into these deep hollows, and if there is not any large opening by which it can drain off, it accumulates and fills the valley with a body of dense, stagnant air, the temperature of which descends very low before morning. In such places, typhus fever and erysipelas were very prevalent during last summer, and were also very fatal. With this exception, the mountain regions are very healthy; and it is a striking fact, in confirmation of this, that exposure can be borne here to almost any extent with impunity. During ten months in the year, the shelter of a tree is all that is required. When travelling in the mountains, I always slept in the open air except when it rained, and I never experienced the slightest inconvenience from so doing; nor have I ever seen any instance in which bad results followed, except in wet weather. This is very different from what we are taught to believe as regards exposure to the night air in the Atlantic States, with how much reason I cannot pretend to say, never having there tried the experiment. The general health of the community is, I believe, of a higher character than in any other part of the Union; the complexion here generally assumes that ruddy tint which is considered, and I think justly, as the most unequivocal sign of a high state of health in individuals of the Anglo-Saxon race. A residence of a few months in the country is almost always accompanied by a marked increase in weight, and there can be no doubt but that the climate is conducive to fertility in the female. Although I may expose myself to the charge of enthusiasm as regards the climate of this country, yet I am but expressing my candid opinion when I state that I believe California will be found more conducive to the highest physical and intellectual development of the Anglo-Saxon race, than any other part of the globe. There is not a day in the year in which the powers of the mind or the body are enervated by heat or numbed by cold. And when the agricultural resources of the country shall become developed, and the swamp lands reclaimed and brought under cultivation, I believe that every external influence, detrimental to the preservation of health, will be reduced to a minimum.

Table showing the number of cases of the principal diseases admitted into the State Hospital, Sacramento City, with their average mortality and duration of treatment.

	June.	July.	August.	September.	October.	November.	December.	Total.	Number of deaths. Per cent.	Average time of treatment.	Number of cases in Sacramento.
Intermittent fever . . .	6	6	11	12	4	6	45	1.2	7 dys	5	
Bilious remittent fever . .	4	6	21	21	38	18	8	116	4.3	8	6
Congestive fever . . .		2		2				4	50 0	6	1
Typhus fever . . .			1	4	12	5	11	33	39.7	13	3
Continued fever . . .	3	2	2		1	2		10		9	1
Erysipelas			1	4	3	1	2	11	18.1	7	
Diarrhœa	3	1		1	1	3		9			
Chronic diarrhœa . . .	4	3	2	3	5	3	1	21			
Dysentery	2	1	1		1	2	6	13	56		
Acute bronchitis . . .						3		3	54		
Chronic bronchitis . .	1		2		1			4			
Pneumonia							5	5	100		
Pleurisy	1					1		2			
Acute rheumatism . .	9	3	2					14			
Chronic rheumatism .	3	2	5	7	4		2	23			

Amer. Journ. Med. Sci.

On the Pathology of Saccharine Diabetes. By CHAS. FRICK, M. D., of Baltimore.—In conclusion, then, to express in a few words the whole of our knowledge of the pathology of this disease, we say that in a state of health sugar is formed in the liver; that this sugar may be secreted when only azotized food is used; that in all probability it is formed from the fat which is also produced in this organ; and that it is then conveyed by the blood, together with any sugar that may have been taken in as food, to the lungs, and there eliminated in the form of carbonic acid and water. That in diabetes, from some cause at present unknown to us, an unusual amount of this substance is formed by the liver, more than the lungs can dispose of, the surplus passing off by the different excretory and secretory organs: and that although an amylaceous or saccharine diet increases the quantity, yet abstinence from these articles of food will not prevent it from making its appearance in the urine and other excretions.

For many of the ideas herein stated we are indebted to M. Bernard, and we cannot but think that science is under great obligations to him for the satisfactory proofs he has given of the functions of the liver, so long a *terra incognita* to pathologists. Indeed, its importance as an organ of *sanguification* as well as *depuration* ought readily to be admitted, when we consider its large size in proportion to the rest of the body, and the complexity of its anatomical structure.—*Ibid.*

SURGERY AND SURGICAL PATHOLOGY.

On the Effects of Anæsthetic Agents in Operations for Gunshot Wounds. BY J. B. PORTER, M. D., Surgeon U. S. Army.—In our former paper, the case of Williamson was presented with some remarks in relation to the use of sulphuric ether for producing anæsthesia in operations in the General Hospital at Vera Cruz, in 1847. In the summer of that year, an amputation of the thigh was performed, the patient having been put under the influence of ether, in which the hemorrhage was almost uncontrollable. The blood spouted in all directions, and I have never seen an operation where it was necessary to secure so many bleeding vessels. Even after every small vessel that could be got at was secured, it was necessary to use cold water freely to suppress the general oozing of blood. At the time, I imputed the obstinate hemorrhage to the pernicious influence of the ether. In gunshot wounds anæsthetic agents are almost universally unnecessary, and are almost universally injurious. It was for this reason that they were entirely given up in the hospital at Vera Cruz.

It may be well questioned whether anæsthetics are not calculated to produce injurious effects in all important amputations; but they certainly do so in operations performed for gunshot wounds. M. Velpau says: "Chloroform evidently depresses the nervous system, and as great prostration always exists in patients who have received gunshot wounds, it is advisable to refrain from any anæsthetic means."—*Ranking's Abstract*, 1848. Mr. Alcock refers to the cases of soldiers wounded in battle, where the excitement is such as to carry them through almost any operation. I regret that Mr Alcock's paper is not before me. These are the cases spoken of by Mr. Guthrie: "Soldiers in general are anxious to undergo an operation when they find it inevitable, and frequently press it before the proper time; that is, before they have sufficiently recovered the shock of the injury."—*Gunshot Wounds*, p. 232. These are the cases which require a little more time, some "encouraging words," and perhaps a little wine or brandy and water; but no anæsthetics, for the patients are already sufficiently depressed.

There are two sets of cases; in one (Velpeau's), the shock to the nervous system is great, from which the patient may not recover, and the use of anæsthetics would be awfully destructive; in the other class, they are unnecessary, and would prove useless and injurious. In the flap operation, they must prove more injurious than in the circular; from the fact that muscle forms almost the entire covering for the stump; and the contractility of the muscular tissue is for a time almost annihilated, to be recovered irregularly at irregular intervals. Further, after the use of these agents wounds do not heal so readily by the first intention.

M. Jobert, on the use of ether, states that the local inflammation has proved less, and that union by the first intention has been prevented. I am able to bear testimony to the correctness of M. Jobert's statement.

I must be permitted to refer to the *Transactions of the American Medical Association* for 1851, pp. 271, 272, 315, 323. In the Massachusetts General Hospital:—

“It does not appear that the fatal results of amputation have at all diminished by the introduction of anæsthetic agents.”

New-York Hospital:—

“The general mortality has been for three years and a quarter forty *per centum*. As regards the method of operating, we observe that the amputations of the thigh, in which the fatality was as high as thirteen in seventeen, were all flap operations. Eleven of the leg were removed by the circular, one died; while of four by the flap, two died.”

That is, nine *per cent.* in one set of cases, and fifty *per cent.* in the other.

“In almost every case chloroform or ether was employed; but, while it is admitted that anæsthetics may have had some influence in the increased mortality in the New-York Hospital over preceding years, since union by the first intention was now much less frequently observed; still it is to be remembered that hospital gangrene, entirely unknown before, and purulent cachexia and erysipelas, extensively prevailed there during the past three years.”

Could the anæsthetics have had an influence in producing the “hospital gangrene, entirely unknown before,” and the “purulent cachexia and erysipelas,” as well as prevent union by the first intention?

Dr. Lent, Resident Surgeon of the New-York Hospital, says:—

“In almost every case, however, either *chloroform* or *ether* was employed; generally the former until the occurrence of a fatal case from it in this hospital; afterwards the latter, from which we have never had any bad consequences, and which has never failed to prove effectual. * * * Anæsthetics came into general use about the period of the commencement of these statistics. May not the employment of these have had its influence upon the mortality? This is a very important question. We do not deny that it may have had some influence in augmenting the fatality of operations; but we have seen no reason to infer that it has, except perhaps the fact that *union by adhesion* seems to have been much less frequent since the introduction of anæsthetics into this hospital than before. Whether the two are in the relation of cause and effect, it is, we fear, impossible to determine at present.”

In an unhealthy atmosphere or climate, the healing of wounds by adhesive union is doubly important for obvious reasons; and I have often regretted that etherization was so much resorted to in capital operations at Vera Cruz during a portion of 1847; nor can I avoid congratulating both the patients and myself that, before the summer had passed away, its employment was wholly abandoned. Anæsthetics poison the blood and depress the nervous system; and, in consequence, hemorrhage is much more apt to occur, and union by adhesion is prevented.—*American Journal of Medical Science.*

Strangulation from Enlarged Tonsils—Laryngotomy. By J. M. WARREN, M. D., (*Boston Soc. Med. Imp.*)—"Dr. W. showed the larynx of a man on whom he had performed the operation. The patient was brought into the hospital struggling for breath, and almost pulseless, supposed to be laboring under an attack of laryngitis. The danger of suffocation was so imminent that no time could be spared to inquire into the history of the case. Dr. W. had the patient placed immediately on his back, and proceeded to open the larynx—a matter of some difficulty—owing to the violent efforts of the patient for breath. As soon as the air penetrated freely into the larynx, he began to revive; the pulse became more steady; the respiration regular. Stimulants were exhibited both by the mouth and per anum, but the system had received too severe a shock to recover, and he gradually sank and expired quietly in an hour or two after the operation. On removing the larynx, no marks of inflammation of that organ could be detected. On looking further, however, the cause of death was discovered. The tonsils, greatly enlarged, and in a state of violent inflammation, filled up the posterior fauces. The epiglottis had been gradually encroached upon, so that, finally, it was pressed down, and almost completely prevented the entrance of air into the lungs. The history of the case, as learned afterwards from the father of the boy, was this: He had been employed, four days before, in unloading a ship, the weather being very cold and rainy. The following day he was taken with sore throat, for which some simple remedies had been applied on board the vessel where he slept. He was first seen by a physician on the day he was brought to the Hospital—*Amer. Jour. Med. Science.*

On the Radical Cure of Reducible Hernia, by Injection. By JOHN WATSON, M. D., Surgeon to N. Y. Hospital.—I do not propose just now to go into the whole merits or demerits of this operation, a task which has been assigned to other hands, and which has already been in some measure achieved, by one of the Committees of the American Medical Association (see their report in the transactions for the session of May last). My only object is to give the details of a single case treated in this way, in connection with such hearsay information as I have been able to collect concerning the operation in other quarters.

The procedure now under consideration, if I am not mistaken, was first brought into notice through an irregular channel, by a certain Industrialist, of New England. But the first notice I remember to have seen of it, was in Professor Pancost's "Operative Surgery." In July, 1848, my attention was for the second time called to this subject, by a gentleman under my care for the treatment of varicocele, who, a year or more previously, had undergone an operation for the cure of a reducible hernia, by what he described as a trifling process, and with complete success. He spoke of it as a simple puncture, which subjected him to very little uneasiness; and assured me that he was cognizant to the cure or relief of other individuals, who had been treated like himself, by a practitioner of Boston. I subsequent-

ly ascertained, that the instrument with which this individual operates, had been prepared by a cutler of this city; but on inquiry I found that it had been patented by the operator, and was, consequently, to be used only by himself. As I had made an inquiry for it, with the view of employing it on a case then in hand, I could not but feel indignant that any practitioner claiming to belong to the regular profession should have thus prostituted his noble calling to mercenary ends; but believing that no special form of patent instrument is essential for the making of a puncture, or for introducing an irritating fluid beneath the integuments through this, I attempted in my own way to get along without it, as in the following case.

Joseph A. Seavell, of Ohio, seaman, aged 31, was admitted into the New York Hospital, Nov. 24th, 1851, with a large inguinal hernia, occupying the left side of the scrotum, which had been then protruding for several hours, and had resisted several well directed efforts for reduction. The patient for the last four years had been occasionally troubled by the protrusion, but had never before been baffled in his efforts to reduce it: and by the use of a truss he had been able to follow his regular occupation. With some little trouble the tumor was reduced by taxis, soon after his admission; and on the 29th of November, having explained my object to the patient and obtained his consent, I attempted to effect a radical cure of the hernia.

While the patient was lying on his back, with his scrotum and left spermatic cord drawn slightly towards the right side, and with the integuments over the left external abdominal ring slightly on the stretch, I introduced the point of a delicate bistoury through the integuments, directly down to the crest of the os pubis, the point of the instrument touching without dividing the lower termination of Poupart's ligament, and made to work freely in the loose tissue immediately in front of the ring, but without wounding the spermatic cord. Having made the puncture and withdrawn the bistoury, the nozzle of a small syringe, charged with tincture of cantharides, was introduced through the wound, and about a dram of this fluid injected into the bottom of the cut, the hand of an assistant, in the meanwhile, resting firmly over the inguinal canal to prevent any portion of the injected fluid from entering this, or passing through the sac into the abdomen.

The whole procedure was the work of a few seconds, and gave the patient little or no uneasiness. I next applied a compress and spica bandage, to keep the parietes of the inguinal canal in close apposition, and administered an anodyne, keeping the patient on his back, with directions to apply an evaporating lotion, should severe inflammatory symptoms supervene.

In a few minutes after the operation, he began to speak of pain from the injection. The sore became more troublesome, and extended for several inches in every direction, but was severest along the ascending track of the spermatic cord. He slept but little during the following night; but next morning the pain had subsided, a slight soreness only remaining in the part. The patient was at the same time suffering from chancres. I made the treatment of these

the pretext for keeping him on his back with the compress and bandage applied as above, for several days. He spoke of no uneasiness from the operation after the second day. On the 12th of December, he was walking about without his truss, and with no apparent tendency to a recurrence of the hernial protrusion. On the following day, being desirous to join his vessel which was about to sail for South America, he requested his discharge, promising to write to me, and report the further progress of his case, should the swelling reappear,—and, if possible, to report in person, at the close of his voyage. But, as yet, I have not heard of him.

The operation in this instance had evidently a beneficial effect, and I am not certain, that it may not have effected a permanent cure. I am not disposed to believe that any portion of the injected fluid entered the hernial sac; but by exciting inflammation around this within the column of the external ring, and the subsequent condensation of tissues, which is so apt to follow acute inflammation, we may readily imagine that this procedure may, now and then, effect an object which we have hitherto sought in vain to effect by other and severer measures.—*N Y. Med. Times.*

Summary of Twenty-five Cases of Urinary Calculus, in Twenty-three of which the bi-lateral operation was performed. By PAUL F. EVE, M. D., Professor of Surgery in the Nashville University, Tennessee.

Sex.—23 were males, and 2 females.

Race.—2 were black, 2 mulattoes, and 21 white.

Age.—16 were under thirteen years, 7 between twenty and thirty-five, one at sixty five, and one at seventy-seven.

Operation.—24 were cut, 23 of which by the double lithome.

Result.—4 died after being operated upon, 3 of which from the operation, 2 indirectly (supervention of erysipelas), and only one directly (supervention of erysipelas), and only 1 directly from it. The remaining 21 fully recovered. Of the 19 first operated upon, but one died; and in that instance, death was not owing to lithotomy. 17 were well in two weeks after the bi-lateral operation. In no case have I heard of the reproduction of stone, nor has a fistula occurred in one.

Number of Calculi and their Chemical Constituents.—Single in twenty-two cases, 2 in one case, 3 in another, and 117 in another; total, 144 stones in the twenty-five cases. Composition, chiefly some preparation of lime. There is not the usual proportion of uric acid formation. Of the five specimens obtained in Tennessee, each contained lime; thus confirming Prof. Peters' analysis of the Dudlean collection of calculus at Lexington, Kentucky. It would seem from this collection that phosphate of lime is not as rare a composition of urinary concretions as is generally supposed.

My method of performing lithotomy is now submitted, but claiming for it nothing original.

It will be seen that decided preference is given to the bi-lateral operation of the late distinguished French surgeon, Dupuytren. I

have found that owing to the irregularity of the external surface operated upon, it was difficult to make the crescent-like shape or the semicircular incision through the skin and soft parts. I now make the cut like a λ , with a short tail. The grooved staff previously introduced into the bladder, and the scrotum elevated by an assistant; a short incision is made directly upon the raphe of the perineum at the bulb of the urethra, and the direction changed at a very oblique angle at the end of about three quarters of an inch, to terminate at a point midway between the anus and left tuberosity of the ischium. With the edge of the knife now turned upwards, it is made to penetrate and commence the other leg of the λ at the point of the right side corresponding to the one just terminated upon the left. This incision is deepened as the instrument ascends, and arriving at the middle of the perineum with the edge turned directly upwards, the urethra is opened, and the groove of the staff exposed. This not only simplifies the external incision of lithotomy, but effectually guards against the liability to wound the rectum. The operation is then completed in the usual way.

The suggestions made in the *Southern Medical and Surgical Journal*, in 1849, in regard to the instruments, I expect to have carried out this summer while in Paris; and they may hereafter be presented to the profession.—*Nashville Journ. Med.*

MISCELLANEA.

The Mineral Acids in Cholera. By A. HESTER, M. D.—We feel it our duty as editor, to call the attention of the profession to the efficacy of the mineral acids in the treatment of Cholera. From time to time, we have noticed certain communications in the London Lancet and other respectable periodicals, in which Sulphuric Acid has been highly extolled as a remedy in Cholera and Diarrhœa. Recently, during the prevalence of this disease in our city, some of our most respectable Physicians have been induced to test this medicine, and according to their testimony, with the most astonishing results. It has proved successful in several cases, marked by complete collapse,—a cold, relaxed and clammy skin—sunken and retracted features—pulseless—with vomiting and colliquative discharges; and indeed all those fearful symptoms which generally characterize the latter stages of this disease. Of course, it is not contended that the medicine will relieve and restore those who have been collapsed for hours; in such cases Providence alone can avail any thing. But in cases just sinking into and even already collapsed, the following formula has arrested the disease and brought about reaction :

R	Acid Sulphuric, gutt xii
	Acid Nitric, " x
	Aqua Distil. f ʒ iss
	Sach. Alb. qs.

Fit. Mist.

Dose—Tea spoonful every ten minutes. The medicine speedily allays vomiting and checks the purging, and the pulse gradually but steadily rallies, and reaction is in due time established. None of

these cases have come under our personal observation ; but we have assurances of the efficacy of this treatment from medical friends in whose intelligence and veracity we place implicit confidence.

We are now testing the remedy, but will not be able to report the result in this number.

We hope our friends will give it a fair trial, should opportunity, unfortunately, offer. The patients take it readily, and it is scarcely less pleasant than a lemonade. Whilst using the medicine internally, the usual revulsives and counter-irritants may be employed externally.—*N. O. Med. & Surg. Jour.*

Efficacy of full doses of Quinine in Comatose pernicious Intermittent fevers.—*Comatose Pernicious Intermittent Fever* is, among French writers, tantamount to our *Malignant Intermittent*, attended or complicated with violent cerebral symptoms. We read with much pleasure and instruction the report of two cases of this form of fever in our industrious cotemporary, *L'Union Medicale de la Louisiane*, drawn up by Dr. Charles Faget of this city. One was the case of a Priest—the other that of a negress. Both, during each returning paroxysm, labored under stupor, or rather coma, with a small, feeble and rapid pulse, cool extremities and tongue. With much tact and *habilité*, Dr. Faget detected the *remittent nature* of the disease, and forthwith decided upon the *only* course of treatment upon which he could rely for success, being well aware that each recurring *access* but diminished his chance of success. With as much boldness as skill, he resorted to full doses of the Sulphate of Quinine, regardless of the comatose symptoms, and had the gratification of rescuing both his patients from death. He gave 35 grains of Quinine to his clerical patient at one dose, and gradually reduced it daily. As the heat returned to the extremities, the pulse rose and became full, and the head symptoms yielded. The negress was treated in a similar manner, with the addition of cold effusions upon the head, and she too gradually rallied.—*N. O. Med. & Surg. Jour.*

Proceedings of the New York State Medical Society at its semi-annual Meeting.—This Society commenced its second semi-annual meeting, at the College of Physicians and Surgeons, Crosby Street, June 29. President, Dr. Alonzo Clark, in the chair. Committees to arrange business and to admit honorary members for the session were appointed.

The President read an address, one of the most important suggestions of which was, the construction of a series of blank forms, embracing various important diseases, to be printed and circulated, in order to obtain statistics on a uniform basis.

Dr. Tuthill read an elaborate and valuable paper upon vital statistics, which was referred for publication.

Prof. C. A. Lee read a paper upon the moving forces of the circulation, giving a *résumé* of the various theories propounded in explanation. Mrs. Willard's opinions received full consideration.

Dr. Swett read a paper on the Pathology of Bright's Disease, in

confirmation of the views on this subject, recently brought forward by Dr. Johnson, of London, that the disease is a fatty degeneration of the kidneys. Dr. Van Arsdale exhibited, under the microscope, a number of specimens, illustrating the appearance presented by this degeneration. The two microscopes used were manufactured by an artist, residing at Brooklyn, of the name of Grunow.

Wednesday, June 30.—Dr. J. R. Wood, of this city, then gave a history of a remarkable case of rupture of the bladder successfully treated, in a boy about ten years of age. The little patient was exhibited, much to the satisfaction of the members. Dr. Wood remarked, that of some eighty similar cases, whose histories had been collected, not more than two or three had recovered.

Dr. Thomas Spencer read a very able paper on the "Atomic Theory of the Growth of Vegetables," accompanied with large colored diagrams, by which he illustrated all the changes that take place in the vegetable organization, which he attributed to the chemico-vital action of six elements, which were prominently displayed by new chemical symbols, viz., two supporters of combustion, chlorine and oxygen; two leading combustibles, carbon and hydrogen; and two combustible metals, sodium and iron. By the instrumentality of iron at the leaf, the carbonic acid for tree growth is made from the food of plants, as the doctor explained; and the strict analogy of *leaf* and *lung* respiration was pointed out in part, although time did not allow his presenting the animal branch of his subject in full, as he had been invited to do, and sustained with uncommon ability. The paper was referred to the Committee on Publication of the State Medical Transactions.

Dr. Parrish, of Philadelphia, then presented copies of the Pennsylvania Medical Transactions, calling attention to one feature of them, the study of epidemics in connection with the geological structure of their different localities, and thanking the Society also, for the honor of being elected an honorary member.

After the action taken thereon, the President passed the Society over into the hands of the Committee of Arrangements, under whose direction they visited the New-York Blind Asylum, the Institution for the Deaf and Dumb, the Reservoir, the High Bridge, &c.; calling, on their return, at the elegant country seat of Dr. Mott, at Bloomingdale, by whom they were entertained in the most hospitable manner.

In the evening, the Society attended a meeting of the New York Pathological Society, at their rooms, in the Crosby Street College, which was also attended by a large number of physicians, many of them from other sections of the State.

Numerous specimens of interest were exhibited, and made the subjects of valuable and practical remarks.

Thursday, July 1.—The Society again met, according to adjournment, at the College. The President, Dr. Clark, made a very interesting communication to the Society on the subject of pneumonia, containing some new views as to the nature of the changes which occur in its different stages; after which the Society adjourned for

the purpose of visiting the various hospitals and establishments, at the invitation, and under the charge of the Governors of the almshouse, on Randall's Ward's, and at Blackwell's Islands, and at Bellevue.

This excursion afforded the members great satisfaction, and impressed them very favorably with the character and management of our public benevolent institutions.

Friday, July 2.—Dr. Corson read an interesting paper on the Functional Diseases of the Heart, their Rational and Physical Signs, and Treatment, which was referred to the Committee on Publication.

Dr. Van Buren then read a paper on the operation of tying the subclavian artery, with statistics of the operation, together with a report of the case, in which he operated successfully, the patient being under the influence of chloroform, and with the result of saving the patient's life. Dr. V. B. stated that he had collected 101 cases in which the operation had been performed; 43 deaths out of the whole.

This was a valuable paper, and was also referred to the Committee of Publication.

Dr. Peet, President of the Institution for the Deaf and Dumb, in this city, read an elaborate paper on the statistics, treatment, causes, &c., of deafness and dumbness, containing many interesting results, of which our limits will not allow us to give even a brief abstract. It was regarded as a very valuable contribution to science, and measures were taken to insure for it a circulation commensurate with its merits.

Dr. Spencer gave an outline of some points connected with the paper which he had read, which were rendered brief by the near approach of the hour for visiting the New-York Hospital, to which institution the Society then adjourned, where they examined, with much interest and satisfaction, the improvements in ventilation and warming recently introduced.

The afternoon was chiefly devoted to an exposition, by Dr. Clark, of the statistics of pulmonary consumption. Thanks were then voted to the managers of the different public institutions for their kind invitations, also to Drs. Mott, Cheesman, and Stevens, and to the College of Physicians and Surgeons, for the ample accommodation furnished; when the Society adjourned.

An invitation was extended to the Society to meet the New-York Academy of Medicine, and to visit the new college edifice of the University of the City of New-York, in Fourteenth Street, which were accepted; but, owing to the many other pressing engagements, could not be met.

EDITORIAL AND PROFESSIONAL CHANGES.

DR. JOHN EVANS has retired from the editorial management of the North-Western Medical and Surgical Journal, and Drs. W. B. HERRICK and H. A. JOHNSON have succeeded him.

DR. R. E. ROGERS of the University of Virginia has been appointed to the Chair of Chemistry in the University of Pennsylvania, rendered vacant by the decease of his brother, DR. J. B. ROGERS.

DR. PAUL F. EVE has become associated with DR. W. K. BOWLING in the editorial management of the Nashville Journal of Medicine and Surgery.

DR. E. L. DUDLEY has retired from the editorship of the Transylvania Medical Journal, and DR. L. J. FRAZER succeeds him.

DR. SAMUEL G. ARMOR has retired from the editorial chair of the Western Medico-Chirurgical Journal.

DR. JOHN BELL has resigned the Chair of Theory and Practice of Medicine in the Medical College of Ohio.

DR. ELI IVES has resigned the Chair of Theory and Practice in Yale College, and been appointed to that of Materia Medica in the same Institution.

DR. WORTHINGTON HOOKER has been appointed the successor of DR. IVES in the Chair of Theory and Practice in Yale College.

DR. R. D. MUSSEY has resigned the Chair of Surgery in the Medical College of Ohio, and DR. H. W. BAXLEY has been transferred from the Chair of Anatomy to the same.

DR. DANIEL DRAKE has resigned the Chair of Theory and Practice in the University of Louisville, and has been appointed to the same Chair in the Medical College of Ohio.

DR. THOS. D. MITCHELL has resigned the Chair of Theory and Practice in the Philadelphia College of Medicine.

DR. J. P. JUDKINS has resigned the Professorship of Anatomy in the Starling Medical College, Columbus, Ohio.

DR. R. H. PADDOCK has been appointed the successor of DR. JUDKINS. He was formerly Professor of the same Chair in the W. Loughby Medical College.

DR. JEDEDIAH COBB has resigned the Professorship of Anatomy in the University of Louisville, and been appointed to the Chair of Anatomy in Medical College of Ohio.

DR. AUSTIN FLINT has been appointed the successor of DR. DRAKE in the University of Louisville.

DR. B. R. PALMER has resigned the Chair of Anatomy in the University of Buffalo, and been appointed the successor of DR. J. COBB in the University of Louisville.

DR. E. M. MOORE has been appointed the successor of DR. PALMER, in the University of Buffalo.

DR. F. G. SMITH our confrère of the Medical Examiner, has been appointed Professor of the Institutes of Medicine in the Pennsylvania Medical College.

DR. J. M. ALLEN has been appointed Professor of Anatomy in the Pennsylvania Medical College.

DR. J. J. REESE has been appointed Professor of Medical Chemistry and Pharmacy in the Pennsylvania Medical College.

DR. J. C. HUGHES has been appointed to the Chair of Anatomy in the Iowa University, rendered vacant by the decease of DR. HARD.

PHILADELPHIA MEDICAL AND SURGICAL JOURNAL.—This is a new Candidate for Professional favor. It is a monthly journal of sixteen octavo pages. Its editor is understood to be Prof. J. BRYAN, M. D., of Philadelphia. A gentleman of a high order of talent, as our readers are well aware by his contributions to this Journal. We cordially wish him success, in his enterprise, and shall with pleasure welcome this journal to our exchange list.

Brooklyn City Hospital.—We congratulate the profession of our sister city on the success which have so far crowned their efforts in relation to this charity. The Trustees of this much needed institution have, considering the difficulties they have had to encounter, acted well their part. And now we understand that the main building with accommodations for about 100 patients is so far completed as to be occupied for hospital purposes. The following is a list of the Medical Staff of the Hospital.

Attending Physicians.

HENRY J. CULLEN, M. D.
JAMES CRANE, JR. M. D.
J. SULLIVAN THORN, M. D.
JOHN. N. CORSON, M. D.

Attending Surgeons.

DANIEL AYRES, JR. M. D.
DEWITT C. ENOS, M. D.
JOHN COCHRAN, M. D.
JAMES M. MINER, M. D.

The following are the statistics of the Brooklyn City Hospital, from its organization, Dec. 6th, 1846, to January 1st, 1852.

Dates.	Medical cases.	Surgical cases.	Total.	Recovered.	Relieved.	Removed by request.	Eloped and Dismissed.	Died.
1847. . .	87	37	124	93	8	3	1	19
1848. . .	60	30	90	70	3	5	3	13
1849. . .	46	42	88	64	11	4	0	9
1850. . .	52	43	95	63	14	4	2	12
1851. . .	52	78	130	85	13	4	2	25
	297	230	527	375	49	20	8	78

Remaining under treatment, January 1, 1852—16.

OBITUARY.

DEATH OF PROF. J. B. ROGERS, M. D.—In Philadelphia, on the 15th of June last, of Bright's disease of the kidney, in the 49th year of his age. Dr. Rogers in 1847 succeeded Dr. Hare as Professor of Chemistry in the University of Pennsylvania. He was a talented and accomplished lecturer; a gentleman and a man of science.

DEATH OF ISAAC PARRISH, M. D.—In Philadelphia, recently of dysentery, aged about 40 years. He was an honored physician, a distinguished writer, and a Christian.

DEATH OF JOHN R. CHAPIN, M. D.—At New Haven, Ct., on the 23d of June, aged 41 years.

TO READERS AND CORRESPONDENTS.

A System of Operative Surgery; based upon the practice of Surgeons in the United States, and comprising a Bibliographical Index and Historical Record of many of their Operations, during a period of two hundred years. By HENRY H. SMITH, M. D., Surgeon to the St. Joseph's Hospital; Assistant Lecturer on Demonstrative Surgery in the University of Pennsylvania, etc., etc. Illustrated by numerous Steel Plates. Philadelphia: Lippincott, Grambo & Co. 1852. 8vo., pp. 698, with 80 colored plates. (From the Publishers.)

Transactions of the Medical Society of the State of Pennsylvania, at its Annual Session, held in the city of Philadelphia, May, 1852. Vol. II. Published by the Society. Philadelphia, 1852: 8vo. pp. 146. (From the Society.)

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia. From August 4, to October 6, 1852, inclusive. Philadelphia: Lippincott, Grambo & Co. 1852. 8vo., pp. 28. (From the Publishers.)

Superiority of Sanitary Measures over Quarantines. An Address delivered before the Suffolk District Medical Society, at its third Anniversary Meeting. Boston, April 24, 1852. By HENRY G. CLARK, M. D., one of the Surgeons to the Massachusetts General Hospital. Printed by request of the Society. Boston: 1852, 8vo., pp. 40.

Appendix (C.) to the Report of the General Board of Health on the Epidemic Cholera of 1848 and 1849. Abstract of Report, by JAMES WYNNE, M. D., on Epidemic Cholera as it prevailed in the United States in 1849 and 1850. Presented to both Houses of Parliament by command of her Majesty. London: 1852, 8vo., pp. 93. (From Dr. Wynne.)

On Syphilis, Constitutional and Hereditary; and on Syphilitic Eruptions. By ERASMUS WILSON, F. R. S., author of "A Treatise on Diseases of the Skin," etc. With 4 colored plates. Philadelphia: Blanchard & Lea, 1852, 8vo., pp. 284. (From the Publishers.)

The Transactions of the Third Annual Meeting of the Medical Society of the State of Georgia, held in the city of Augusta, April, 1852. Penfield: 1852, 8vo., pp. 100. (From the Society.)

Proceedings of the Medical Association of the State of Alabama, begun and held in the city of Mobile, December 10-14th, 1850. With an Appendix. Mobile: 1851, 8vo., pp. 156. (From the Association.)

The Transactions of the Illinois State Medical Society, for the year 1852. Peoria: 1852, 8vo., pp. 94. (From the Society.)

Illustrated Manual of Operative Surgery and Surgical Anatomy. By MM. CL. BERNARD, D. M. P., and CH. HUETTE. Edited, with Notes and Additions, N. S.—VOL. IX. NO. III.

by WM. H. VAN BUREN, M. D., and C. E. ISAACS, M. D. Illustrated with steel Engravings from Drawings after Nature, by M. J. L  veill  . Designed to serve as a companion to the ordinary text-books of Surgery. New-York and London. H. Bailliere. 1852. Part 2, 8vo., pp. 120; with 27 colored plates. (From the Publisher.)

A Practical Treatise on Diseases of the Skin. By J. MOORE NELIGAN, M. D., M. R. I. A., Lecturer on Practice of Medicine in the Dublin School of Medicine, etc. Philadelphia: Blanchard & Lea. 1852. 12mo., pp. 333. (From the Publishers.)

The Physician's Visiting List, Diary and Book of Engagements. For 1853. Philadelphia: Lindsay & Blakiston. (From the Publishers.)

The following Journals have been received in exchange;

The American Journal of the Medical Sciences; edited by ISAAC HAYS, M. D.; for Oct. (Quarterly. Philadelphia.)

The American Journal of Insanity; edited by the officers of the N. Y. State Lunatic Asylum; for Oct. (Quarterly. Utica.)

The American Journal of Pharmacy; edited by JOSEPH PARRISH, M. D., and WM. PROCTOR, M. D.; for Oct. (Quarterly. Philadelphia.)

The New Jersey Medical Reporter, and Transactions of the New Jersey Medical Society; edited by JOSEPH PARRISH, M. D.; for Sept. and Oct. (Monthly. Burlington.)

The Medical Examiner and Record of Medical Science; edited by F. G. SMITH, M. D., and JOHN B. BIDDLE, M. D.; for Sept. and Oct. (Monthly. Philadelphia.)

The Charleston Medical Journal and Review; edited by D. J. CAIN, M. D., and F. P. PORCHER, M. D.; for Sept. (Bi-monthly. Charleston.)

The New-Orleans Medical and Surgical Journal, devoted to Medicine and the Collateral Sciences; edited by A. HESTER, M. D.; for Sept. (Bi-monthly. New-Orleans.)

Southern Medical and Surgical Journal; edited by L. A. DUGAS, M. D.; for Sept. and Oct. (Monthly. Augusta.)

Buffalo Medical Journal and Monthly Review of Medical and Surgical Science; edited by AUSTIN FLINT, M. D.; for Sept. and October. (Monthly. Buffalo.)

The North-Western Medical and Surgical Journal; edited by W. B. HERRICK, M. D., and H. A. JOHNSON, M. D.; for Sept. and Oct. (Monthly. Chicago and Indianapolis.)

Transylvania Medical Journal; edited by L. J. FRAZEE, M. D.; for Sept. and Oct. (Semi-monthly. Lexington.)

The Western Lancet and Hospital Reporter; edited by L. LAWSON, M. D., and GEORGE MENDENHALL, M. D.; for Sept. and October. (Monthly. Cincinnati.)

The New-York Medical Times; edited by H. D. BULKLY, M. D.; for Sept. and Oct. (Monthly. New-York.)

The New-York Medical Gazette; edited by D. M. REESE, M. D.; for Sept. and Oct. (Semi-monthly. New-York.)

The Boston Medical and Surgical Journal; edited by J. V. C. SMITH, M. D.; Sept. and Oct. numbers received. (Weekly. Boston.)

The Western Journal of Medicine and Surgery; edited by L. P. YANDELL, M. D., and T. S. BELL, M. D.; for Sept. and Oct. (Monthly. Louisville.)

The Ohio Medical and Surgical Journal; edited by RICHARD L. HOWARD, M. D.; for Sept. (Bi-monthly. Columbus.)

The Stethoscope and Virginia Medical Gazette; edited by P. CLAIBORNE GOOCH, M. D.; for Sept. and Oct. (Monthly. Richmond, Va.)

Nashville Journal of Medicine and Surgery; edited by W. K. BOWLING, M. D., and PAUL F. EVE, M. D.; for Sept. and Oct. (Bi-monthly. Nashville, Tenn.)

The New-Orleans Monthly Medical Register; edited by A. FORSTER AXSON, M. D.; for Sept. and Oct. (Monthly. N. O.)

Nelson's Northern Lancet and American Journal of Medical Jurisprudence; edited by HORACE NELSON, M. D.; for Sept. and October. (Monthly. Plattsburgh, N.Y.)

The New-Hampshire Journal of Medicine; edited by EDWARD H. PARKER, A. M., M. D.; for Sept. and Oct. (Monthly. Concord, N. H.)

New-York Journal of Pharmacy; edited by BEN. W. MCCREADY, M. D. No number received since July last. (Monthly. New-York.)

The Western Medico-Chirurgical Journal; edited by J. F. SANDFORD, M. D. for July and August. (Monthly. Keokuk, Iowa.)

New-Yorker Medicinische Monatsschrift. Herausgegeben und Redigirt, von Dr. J. HERZKA, Dr. E. KRACKOWIZER und W. ROTH in New-York; for Sept. and Oct. (Monthly. New-York.)

The East Tennessee Record of Medicine and Surgery; edited by FRANK A. RAMSEY, M. D.; for July. (Quarterly. Knoxville, Tenn.)

The Journal of Psychological Medicine and Mental Pathology; edited by FORBES WINSLOW, M. D.; for Oct. (Quarterly. London.)

Dublin Quarterly Journal of Medical Science; edited by —; for Aug. (Quarterly. Dublin, Ireland.)

Dublin Medical Press; edited by —; for Aug. and Sept. (Weekly. Dublin.)

Canada Medical Journal; edited by R. L. McDONALD, M. D., and A. H. DAVID, M. D.; for Sept. and Oct. (Monthly. Montreal)

The Upper Canada Journal of Medical, Surgical, and Physical Science; edited by —; for Sept. and Oct. (Monthly. Toronto.)

London Journal of Medicine; a Monthly Record of the Medical Sciences; edited by —; for Aug. and Sept. (Monthly. London.)

Monthly Journal of Medical Science; edited by WM. ROBERTSON, M. D.; for Sept. and Oct. (Monthly. Edinburgh.)

The British and Foreign Medico-Chirurgical Review for Oct. (Quarterly. New-York Edition.)

The Retrospect of Medicine; edited by W. BRAITHWAITE; for June. (Half-Yearly. London.)

The Half-yearly Abstract of the Medical Sciences; edited by W. H. RANKING, M. D.; for June. (Half-yearly. London and Philadelphia Edition.)

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CONTENTS.—NO. III.

(NEW SERIES.)

PART I.—ORIGINAL COMMUNICATIONS.

ART. I.—Cases in Surgery.—Amputation at the Knee-joint. By W. PARKER, M. D., Professor of Surgery in the College of Physicians and Surgeons, New-York. Reported by STE- PHEN SMITH, M. D.	307
ART. II.—Contributions to the Practice of Midwifery: being a Selection of Cases from Private Practice, with Remarks. By SAMUEL S. PURPLE, M. D. [With illustrations.] . . .	330
Cases of Unavoidable Hemorrhage, or Placenta Prævia . . .	330
Cases of the Rupture of the Uterus	338
Cases of Difficulty arising from deviations in the Natural Position or condition of the Umbilical Cord	343
ART. III.—Medical Notes and Observations. By an EX-HOUSE SURGEON, No. 2.	354
ART. IV.—Penetrating wound of the Posterior Tibial Artery, followed by Traumatic Aneurism.—Ligature of the Artery at the point of Injury.—Secondary Hemorrhage.—Ampu- tation. By J. H. BROWN, M. D. Paris, Me.	362
ART. V.—Memoir on Nicotine, by M. ORFILA. Translated from the French, by CHARLES A. LEE, M. D., with notes.	369

PART II.—CRITICAL ANALYSIS.

ART. VI.—General Pathology, as conducive to the establishment of Rational Principles for the Diagnosis and Treatment of Disease. A course of Lectures, delivered at St. Thomas's	
--	--

Hospital, during the summer session of 1850. By JOHN SIMON, F. R. S., one of the Surgical Staff of that Hospital, and Officer of Health to the city of London. Philadelphia: Blanchard and Lea, 1852. pp. 211. - - - 388

ART. VII.—A System of Operative Surgery; based upon the practice of Surgeons in the United States, and comprising a Bibliographical Index and Historical Record of many of their Operations, during a period of two hundred years. By HENRY H. SMITH, M. D., Surgeon to the St. Joseph's Hospital; Assistant Lecturer on Demonstrative Surgery in the University of Pennsylvania, etc., etc. Illustrated by numerous Steel Plates. Philadelphia: Lippincott, Grambo & Co. 1852. 8vo., pp. 698, with 80 colored plates. - - 408

ART. VIII.—Operative Surgery Illustrated; containing more than Nineteen Hundred Engravings; including Two Hundred Original and Fifty colored Drawings. With Explanatory Text. By R. U. PIPER, M. D. Also a chapter upon the use of Ether in Surgery, from the Transactions of the American Medical Association; written at the request of a Surgical Committee of that body. By HENRY J. BIGELOW, M. D., Professor of Surgery in the Medical School of Harvard University. Boston: Ticknor, Reid & Fields. 1852. 8vo., pp. 384. - - - 410

ART. IX.—A practical Treatise on Diseases of the Skin. By J. MOORE NELIGAN, M. D., M. R. I. A., Lecturer on Practice of Medicine in the Dublin School of Medicine, etc. Philadelphia: Blanchard & Lea. 1852. 12mo. pp. 333. - 411

ART. X.—Sketches of Brazil; including New Views of Tropical and European Fever; with Remarks on a Premature Decay of the System incident to Europeans on their return from Hot Climates. By ROBERT DUNDAS, M. D., Physician to the Northern Hospital, Liverpool; formerly Acting Surgeon to H. M. 60th Regiment, etc., etc. London: John Churchill. 1852. Crown 8vo., pp. 449. - - - 411

ART. XI.—Examinations of Drugs, Medicines, Chemicals, &c., as to their Purity and Adulterations. By C. H. PIERCE, M. D., Examiner of Medicines, &c., for the Port of Boston. Cambridge: John Bartlett. 1852. 12mo., pp. 264. - 412

- ART. XII.—Clinical Reports on Continued Fever, Based on Analysis of one hundred and sixty-four cases; with Remarks on the Management of continued Fever; the Identity of Typhus and Typhoid Fever, Relapsing Fever, Diagnosis, &c. To which is added a Memoir on the Transportation and diffusion by contagion of Typhoid Fever, as explained by the occurrence of the disease at North Boston, Erie county, N. Y. By AUSTIN FLINT, M. D., Prof. of the Principles and Practice of Medicine and of Clinical Medicine in the University of Buffalo, and Editor of the Buffalo Medical Journal, etc. etc. Buffalo: Geo. H. Derby & Co. New-York, G. P. Putnam. 1852. 8vo. pp. 390. - - 413
- ART. XIII.—Illustrated Manual of Operative Surgery and Surgical Anatomy. By MM. CL. BERNARD, D. M. P., and CH. HUETTE. Edited, with Notes and Additions, by WM. H. VAN BUREN, M. D., and C. E. ISAACS, M. D. Illustrated with steel engravings from drawings after nature, by M. J. Lèveillé. Designed to serve as a companion to the ordinary text-books of Surgery. New-York and London. H. Bailliere. 1852. Part 2, 8vo., pp. 120, with 27 colored plates. - - - - - 413
- ART. XIV.—The Physician's Visiting List, Diary and Book of Engagements, for 1853. Philadelphia: Lindsay & Blackiston. - - - - - 414
- ART. XV.—Transactions of State Medical Societies. - - 414

PART III.—FOREIGN MEDICAL RETROSPECT.

PHYSIOLOGY.

- On the Final Cause of Menstruation. - - - - 415

PATHOLOGY AND PRACTICAL MEDICINE.

- On the Use of Gutta Percha in the Treatment of Diseases of the Skin. - - - - - 417
- On Bright's Disease, and its Connection with Puerperal Convulsions. - - - - - 418
- Treatment of Typhus Fever by Sulphate of Quina. - - 421
- On the Treatment of Puerperal Convulsions during Labor at the Full Period. - - - - - 422
- On the use of Indian Hemp as an Oxytotic, or Promoter of Delivery. - - - - - 423

SURGERY, AND SURGICAL PATHOLOGY.

Are Primary or Secondary Amputations to be preferred? -	424
Dislocation of the Acromial end of the Clavicle. - - -	427
Supposed Aneurism of Bone. - - - - -	428

PART IV.—AMERICAN MEDICAL RETROSPECT:

SURGERY.

Case of Complete Removal of the Clavicle. - - -	430
On the Remedial Virtues of Fel Bovinum, and the Diseases to which it is Applicable. - - - - -	431
On the Use of Ice as a local Anæsthetic. - - - -	434
On the Treatment of Hemorrhage from the Umbilicus in New-Born Infants. - - - - -	434

MISCELLANEA.

New Work on Materia Medica. - - - - -	436
Professor Lee's Translation of Orfila on Nicotine. - -	437
New-York Medical Times. - - - - -	437
New-York Medical College. - - - - -	437
College of Physicians and Surgeons. - - - - -	437
Miami Medical College. - - - - -	437
New-York Ophthalmic Hospital. - - - - -	437
Professor Valentine Mott. - - - - -	437
Medicine Department of Yale College. - - - - -	437
American Medical Association. - - - - -	437

OBITUARY.

Death of Dr. Joel A. Wing. - - - - -	438
Death of Dr. William Anderson. - - - - -	438
Death of Dr. Æneas Monson. - - - - -	438
INDEX. - - - - -	439

THE NEW-YORK
JOURNAL OF MEDICINE
FOR NOVEMBER, 1852.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I.—*Cases in Surgery.—Amputation at the Knee-joint.* By W. PARKER, M. D., Professor of Surgery in the College of Physicians and Surgeons, New York. Reported by STEPHEN SMITH, M. D.

CASE.—*History.*—John McNeill, aged 25 years, of good constitution, and temperate habits, native of New-York, and cabinet-maker by occupation, came under observation on the 7th of April, 1852. He states that when four years of age he had an attack of scarlet fever, which left him with the right leg partially paralyzed, the foot being turned inwards, and the patella displaced to the outer and inferior aspect of the external condyle. Arrest of development occurred, and this limb has now an atrophied appearance, being smaller, and about two inches shorter than the other, and of diminished sensibility. It has several times suffered injuries, and has twice been frost-bitten, but without any permanently ill effects. The patient's wish is to have his deformed and paralyzed limb made more serviceable by amputation, and the substitution of

an artificial leg. Upon examination, it was decided that disarticulation at the knee-joint would afford, under the circumstances, the most serviceable stump and the most useful extremity. The condition of this articulation favored the proposed operation, and seemed to promise as fair results as this species of amputation has ever afforded.*

Operation.—The patient was placed upon a table of suitable height, and a mixture of chloroform and ether administered, to the influence of which he was observed to yield with unusual readiness. Pressure being made upon the femoral artery in the groin by an assistant, and the integuments of the thigh drawn forcibly upward from the knee, while the leg was held in a flexed position, the operation was commenced by making the anterior flap, having its lower border about an inch below the insertion of the ligamentum patellæ, and carrying the knife into the joint over the head of the tibia, and completed by making the posterior flap from the calf. The patella was dissected from its attachments and removed. But little blood was lost; five ligatures were employed to secure arteries; the flaps were brought together and united by sutures, and the stump dressed.

It should be stated that during the operation, at one time the pulse fell to forty beats per minute, the respiration became irregular and scarcely perceptible, and for a moment he seemed sinking past recovery. Active measures for his restoration were immediately had recourse to, such as artificial respiration, brandy and ammonia, and reaction soon came on. The remainder of the operation was completed without the further employment of chloroform, although the patient urgently requested it.

Treatment.—Pulse continued at 132 per minute for 24 hours after the operation; ordered an anodyne, which induced sleep, and the case progressed favorably for several days.

5th day.—During the last few hours there has been some

* The patient had previously consulted Mr. Palmer, the manufacturer of artificial limbs, who advised amputation at the knee-joint, as the point best adapted in his case for the adjustment of a wooden limb.

bleeding from the stump, which shows a disposition to hemorrhage. It was first checked by elevating the part and applying cold. It recurred again, and was controlled this time only by compressing the femoral artery in the groin. The amount of blood lost thus far was not sufficient to produce any constitutional effect.

6th day.—The dressings were removed and the stump exposed; the anterior flap exhibited a slight erythematous blush, which disappeared on the application of cold. It being deemed advisable, as the flaps had gradually become distended, the sutures were cut and the wound laid open; several clots of blood were removed, two cutaneous arteries secured, and the wound left open. During the afternoon there were two recurrences of hemorrhage, and after the latter the anterior flap was turned back and an artery tied; wound still left exposed. The tendency to hemorrhage, however, continued, and the oozing was checked by the application of a solution of alum. Anodynes were continued to quiet the irritation, and a solution of quinine was commenced as a tonic. During the following five days his condition continued gradually to improve, and the wound to granulate.

11th day.—Last evening the stump again began to bleed more freely and steadily than formerly, but it was impossible to determine the precise source of the hemorrhage. It was finally stopped by compression of the femoral artery, and there was no return of bleeding during the night.

12th day.—Hemorrhage again returned, and was controlled by pressure applied to the femoral artery.

13th day.—The bleeding recurred in the morning, and could be controlled only by compressing the artery; this was kept up the greater part of the day until about 6 o'clock, P. M., when a ligature was placed around the femoral artery. The constitution had before this begun to feel the continued drain of blood from the stump, and the pulse again rose to 132 per minute. A yeast poultice was applied to the stump, and his former treatment continued. For the two following days he suffered much from nausea and vomiting, the result of imprudence in diet; after this he began to improve in strength, the pulse became less frequent, and the wound discharged freely, presenting a healthy, granulating appearance.

20th day.—Free hemorrhage again occurred from the stump; the blood probably escaping from the perforating arteries through their anastomoses with the ischiatic, a branch of the internal iliac artery. As the loss of blood had now become a serious feature in the case, and was likely soon to threaten the life of the patient, and as every expedient had been resorted to, but unsuccessfully, to prevent its recurrence, it was resolved to re-amputate the limb through the thigh. Accordingly ether was cautiously administered, new flaps formed, the lower extremity of the femur sawed off, and six arteries tied including the femoral.

25th day.—Patient is progressing favorably in every respect. Nothing worthy of particular note occurred in the further history of this case. The ligature on the femoral artery came away on the 24th day; those on the stump separated in about the same period. These ligatures were treated very cautiously owing to the tendency to hemorrhage. The patient continued gradually to recover his strength after the last operation, under the use of tonics and generous diet, and, excepting the occurrence of an abscess on the extremity of the stump, no unfavorable symptom has been experienced.

Remarks.—The earliest notice of amputation of the leg at the knee-joint, is by the Father of Medicine. By the ancient surgeons, amputation of the extremities was limited to cases of gangrene, and with their inefficient means of arresting hemorrhage, so much did they fear this complication, that they cautiously removed only the dead portions, carefully avoiding making a breach in the living tissues, and selecting as most favorable for the operation the point where it could be most expeditiously performed. Hence Hippocrates, in his article on the Articulations,* directs: "Those parts of the body which are below the boundaries of the blackening, are to be removed at the joint as soon as they are fairly dead and have lost their sensibility; care being taken not to wound any living part; for if the part which is cut off give pain, and if it should prove not to be quite dead, there is great danger lest the patient may swoon away from the pain, and such swoonings often

* *Works of Hippocrates*, Vol. II. p. 639, *Sydenham Soc. Ed.*

are immediately fatal. I have known the thigh-bones, when denuded in this manner, drop off on the eightieth day ; but in the case of this patient, the parts below were separated at the knee on the twentieth day, and, as I thought, too early, for it appeared to me that this should be done more guardedly." He remarks, also, that "when the forearm and leg drop off, patients readily recover." Disarticulation would seem therefore to have been the earliest form of amputation of the extremities practised, but was performed for the most part through dead tissues. In such veneration were the works of "divine Hippocrates" held by ancient writers, that these rules in regard to amputation were rarely departed from previously to the middle ages.

It is plain that both amputation in the contiguity as well as continuity of bones, as practised by early surgeons, being generally through the dead structures, or encroaching but slightly on the living, has little relevancy to this operation in modern times. When the means of arresting hemorrhage were perfected by the employment of the ligature, the operation came to be resorted to in accidents and other diseases than gangrene, and the methods by which it might be most skilfully and successfully performed, began to be earnestly discussed. Amputation at the articulations was again revived, and according to Pigray, were of not very infrequent occurrence. He says, "Some start objections to cutting in the joint itself, or near it, because of the nervous parts ; nevertheless the danger from these are not so very great. I have seen many such (amputations) which have done well." Paré amputated successfully at the elbow-joint, and still later the great operations of disarticulation of the thigh and arm at their respective articulations with the trunk began to be agitated, and their subsequent successful performance has rendered them legitimate in modern surgery. The only notice of amputation at the knee-joint at this early period is by Fabricius Hildanus, who remarks briefly that he performed this operation in 1581, on a young man of Dusseldorf, who had his leg fractured ; and he adds that he had previously performed it under many circumstances, and as an operation it was familiar to him.

The first writer of modern times, who made this operation

at the joints the subject of special study, was Brasdor, whose "*Essai sur les Amputations dans les Articles*," was published in the fifth volume of the *Memoirs of the Academy of Surgery*, Paris. This writer took strong grounds in favor of amputation in the contiguity of bones, and advocated a like amputation of the knee as well as shoulder and hip-joints. More recently M. Blandin has reproduced the arguments of Brasdor, and added to their importance the sanction of his own opinions. In 1830, M. Velpeau published his *Mémoire sur l'amputation de la jambe dans l'articulation du genou*,* a paper designed to establish the operation of disarticulation of the leg at the knee-joint. Textor and Jæger in Germany wrote favorably of this operation, and the latter is stated to have made a collection of all the published cases, thirty-seven in number. In France, amputation at the knee-joint has been opposed by Larrey and Dupuytren, and since the publication of his essay, Velpeau, from farther experience, has been led to remark, that he feared he had exaggerated the safety of this operation in his attempt to revive it in 1830. A still later and high authority, M. Malgaigne, considers this "another of those operations too inconsiderately condemned, which, when you have a choice, should be preferred to amputation of the thigh in the continuity."

The favor and consideration which this operation has received from British surgeons, as far as the records of their experience give evidence, has been very limited. Mr. Ferguson says, "amputation at the knee-joint has never, to my knowledge, been performed in this country." We shall take occasion, however, to refer to a single case which has fallen under our notice. The operation of Mr. Syme, which he entitles *Amputation at the knee-joint*, is rather an amputation in the continuity than the contiguity of the bone, and cannot be considered a fair test of the operation we now have under consideration.

The experience of American surgeons in amputation at the knee-joint is not inconsiderable, and the success which

* *Dict. de Med. et Chir. Pratique*, Art. Amput. *Archives Générales de Médecine*, t. xxiv. p. 44.

has attended its performance, bears a flattering comparison with that of any other country. The first operator was Dr. Nathan Smith, of New Haven, Connecticut, and his method of operating has the merit of being original and the case of being successful. The number of cases of which we have any knowledge, amounts to twelve, the majority of which have been performed within the last eight years. It will be a matter of local interest to notice, and we allude to the fact with pride, that of these twelve operations, seven were performed in this city, of which three were fatal, three successful, and one was re-amputated; and of these seven cases five occurred in the City Hospital, of which three were fatal, and two entirely successful. The meagerness of the reports of many cases, where the just appreciation of the operation depends upon so many circumstances peculiar to each individual case, is to be regretted; but with this allowance, the facts which we shall now proceed to exhibit, are conclusive in regard to many points hitherto unsettled.

CASE 1.—The first case in this country was recorded by Dr. Nathan Smith, of New Haven, Ct., and is as follows:*

For several years I had contemplated amputating at the knee-joint, whenever a case should occur in which it would be imprudent to operate below the knee, on account of disease in the bones or soft parts, and in which the superior part of the articulation was sound. I had often performed the operation on the dead subject, and found that it might be so accomplished as to leave a very good stump. A case warranting the operation occurred to me in April, 1824. Miss. R. D——, of Brunswick, Me., having a disease in both the bones and the soft parts of the leg, of long standing, and so extensive that it was thought improper to operate below the knee, and, as the inferior part of the femur was sound, I amputated at the joint. The operation is performed as follows: Mark two points, one on the out, and the other on the inside of the limb; the latter half an inch below the head of the tibia, and the other opposite to it. Then draw a semicircular line from one point to the other, over the anterior part of the leg, and in such a direc-

* American Medical Review, Vol. II., p. 370.

tion, that its lower part shall touch the lower part of the tubercle on the tibia into which the ligament of the patella is inserted, and then mark another circle on the posterior part of the leg exactly corresponding to the former. The above lines limit the two flaps, the former of which will be formed of the patella and its ligaments, and the latter of the head of the gastrocnemius, the tendons of the flexor muscles, and the popliteal blood-vessels and nerves. The operator should first raise the anterior flap with the patella, which will expose the anterior part of the joint, and render the division of the lateral ligaments easy. Two or three strokes of the knife will then complete the section of the lower flaps with the crucial ligaments.

In the case mentioned above, the patient recovered without the occurrence of any thing unpleasant. It was accomplished with less pain to the patient and trouble to the operator, than when the separation of a bone is required. The stump will obviously be more useful, as the lower part of it is formed by the patella, which becomes ankylosed to the femur.

CASE 2.—M. L. Blaquière states that, while in Mexico, in 1833, he amputated, at the Hospital of Saint Juan de Rio de Oaxaca, the right leg at the femora-tibial articulation, in an Indian, aged about twenty-five, at the village of Tlacolula, in whom the whole leg, to within a few inches of the knee, had become sphacelated from hot bricks, used during the cold stage of Asiatic cholera, then prevailing in that capital. M. Blaquière did not wait for the limitation of the gangrene, as the patient was in good condition and without fever. He adopted the process of Velpeau,* and had every reason to be satisfied with it; for, although the ruff of integuments intended as a flap to the condyles, also sloughed away, and the cartilaginous incrustation of the articulating surface of the condyles exfoliated; the surgeon, in another visit to Mexico, in 1843, found, on a visit from the patient, that the wound had perfectly healed, with a very small cicatrix, and that the limb had been made very serviceable by an apparatus which the patient had contrived.

* Mott's Velpeau, Vol. VII.

CASE 3.—The operator in this case was Prof. Pancoast, of Philadelphia, from whose *Treatise on Operative Surgery* the details are copied.

In the winter of 1841, I removed, before the class of Jefferson Medical College, at the Pennsylvania Hospital, the leg of Rachel Morris, at the knee joint. The patient was about thirty-five years of age, and had suffered, for several years, with necrosis of the entire shaft of the tibia. The profuseness of the purulent discharges, in conjunction with repeated attacks of diarrhœa, had so broken down her strength, that it had been difficult to prevent her sinking. As the bone was found involved up to the condyles of the tibia, and the integuments were impaired so high up as to render it impossible to perform even amputation through the condyles after the manner of Larrey, there was no alternative save the removal of the limb through the thigh or at the knee-joint. As the chances of recovery after amputation of the thigh, considering her exhausted state, was deemed but small, I decided to remove the limb at the knee-joint, especially as the structures of this articulation were unaffected by disease.

The operation, in which I was assisted by Drs. Mütter and Coates, and others, was done in about two minutes, with the scalpel merely, according to the following process,* though from the extension of the disease of the front of the leg, I was unable to cut the anterior flap of the length described as most appropriate. The cure, which was not rapid, as the cicatrization was not completed till the end of four weeks, was unattended by a single bad symptom—the patient gradually increasing in health and strength, from the first day of the operation. From the unavoidable shortness of the flap covering the condyles, one of these processes became partially exposed, so as to allow me to observe the changes which the articular cartilages underwent. This structure neither reddened nor became painful, so as to exhibit any coating of synovial membrane, or other appearance of organization. It became, by the end of a week, softened and pulpy on its free surface, in the same manner as occurs when the joint is subjected to the

* See description of his operation on subsequent page.

macerating tub of the anatomist. The pulpy lamina, which was so soft as to leave a track, when rubbed with the end of a probe, was insensibly removed with the discharges, by a continuation of the same process of softening and removal; the thin lamina of bone covering the articular face of the condyles was completely bared of the cartilage in the third week. This lamina first presented a dark gray aspect; some small gray conical elevations soon after made their appearance on its surface, and shortly grew into florid healthy granulations, to which, and to other granulations that sprang from the several ends of the conical ligaments, the cutaneous flaps were ultimately firmly united. No appearance of synovial inflammation of the bursa about the joint was manifested during the treatment, and the patella remained movable, on the upper anterior surface of the condyles. The line of cicatrization was drawn backwards, by the hamstring tendons, so as to be opposite the notch, between the condyles, and the patient now preserves a useful limb, with which she moves about with great ease and facility, by applying a healthy surface of the skin covering the condyles, upon a hair cushion at the top of the ordinary wooden leg.

CASE 4.—The following case was reported to the *Ohio Medical and Surgical Journal*; Vol. I. p. 126, by Dr. Catley, of Delaware:—

Mr. Solomon Schmel, æt. 33, says he was formerly a resident of Berks County, Pa., when, about thirteen years ago, he was thrown from a horse, the animal falling with him; and that, whilst on the ground, the popliteal artery of his right leg was lacerated by the shoe of the horse, and he thinks part of it was torn away. A practitioner was called, who, to stop the bleeding, bound the limb just above the knee, very tightly. The bandage was allowed to remain two days and nights without being slackened, which caused, ultimately, mortification of the lower part of the extremity, up to the point around which the bandage was applied. A second practitioner was called, who removed the leg by disarticulation at the knee-joint. The soft parts, however, sloughed about two inches higher up the limb, leaving the bone nearly naked. This, in

time, was again mostly covered, with something like flesh and skin, but it never healed entirely, though he had been able to perform some labor. For the last year, however, the diseased part has been getting much worse. On examination, the stump presented the following appearance:—On the lower part, for about the space of three inches in breadth, there was neither cutis nor cuticle, but a sort of epithelium, terminating in a mass of fungus, which covered the end of the stump, and also the posterior part, to the height of two or three inches. The texture of this fungus was as coarse as a very coarse sponge. It gave out, at every point, a profuse sanious discharge, and bled freely on being slightly touched. Amputation of the thigh was resorted to, and the patient recovered his health.

The following were the appearances of the amputated portion on dissection:—The fungus gradually became denser, and terminated next the bone in a sort of fibro-cartilaginous substance. The condyles of the femur were absorbed, and the end was rounded or bulbous; the medullary canal was prolonged to near the end of the bone, increasing in calibre towards the lower part, which also terminated in a bulbous extremity. The osseous portion around this was composed of two tables, with a cancellated structure between them, the cells of which were filled with a fluid resembling healthy pus; the bone was not carious or discolored.

CASE 5.—The following case occurred several years since at the *Colored Home* in this city, under the charge of Dr. J. D. Fitch, resident physician. A colored man entered the institution, suffering apparently from a rheumatic affection, located principally in the knee-joints, and was accordingly put under the ordinary treatment for that disease. After a time the pain increased greatly in severity, and became concentrated in one knee; upon examination of this joint a pulsating tumor was found to exist in the popliteal region, and his difficulty was at once decided to be aneurismal. Dr. Sabine, one of the consulting surgeons of this Charity, was called in, and upon consultation, proceeded to apply a ligature to the femoral artery. The case progressed most unfavorably, gangrene of the foot came on, sloughing ensued, and it being in the height of

summer, every thing conspired to depress the general system and hasten the destructive process. The treatment was tonics and stimulants, and such local applications as would act as correctives. The sloughing progressed, first separating the foot from the leg and then extending to the knee, where disarticulation was nearly effected, when the knife was resorted to, and the process completed. The stump was but poorly covered with the remaining integuments, yet granulations sprung up freely over the exposed surface, and cicatrization was in due time accomplished. From the separation of the leg the patient's health began to improve, and became in a measure again established. Although no trial of the stump was had by the application of an artificial limb, yet it had the appearance of being sound and well-conditioned in every respect. He remained in the institution as an assistant until his death, which occurred six months after the operation from phthisis.

CASE 6.—This case presented itself at the *College Clinique*. The patient was from the South, a saddler by occupation. Amputation was practised on account of a gun-shot wound of the leg, and the knee-joint selected because the surgeon had no other instrument than the razor, with which he performed the operation. The stump was a perfect specimen of the kind, and did great credit to the operator. The patient, however, acknowledged to a manufacturer, to whom he made application for a wooden limb, that the stump was tender on pressure.

CASE* 7.—This patient was a female, aged thirty-five, suffering from a burn of the foot, leg and thigh. The operation was performed at the New-York Hospital February 9th, 1846, and terminated fatally on the 26th day.

CASE† 8.—Patient a male, aged twenty-one, suffering from a compound fracture of fibula with terrible laceration. The

* *Statistics of Amputation in the New-York Hospital*. By W. H. BUEL, M. D.—*Am. Jour. Med. Sci.* 1848.

† *Statistics of Operations performed in the New-York Hospital*. By F. D. LENTE, M. D. *Transactions of American Medical Association*, 1851.

operation was performed at the New-York Hospital, October 19th, 1849, and proved fatal on the third day: chloroform was administered.

CASE 8.—Patient a male, aged thirty-six, suffering from syphilitic disease of the bones of the leg with gangrene of the soft parts. The operation was performed at the New-York Hospital, January 21st, 1851, and terminated fatally on the eighth day from the progressive effects of the disease: ether was employed.

CASES 10 and 11.—In addition to the above cases we may allude to the fact, that amputation at the knee-joint has been twice performed at the New-York Hospital, within the last year, with complete success.

For the following particulars of these operations, we are indebted to one of the resident surgeons of that institution.

The first case entered the hospital, Feb. 17th; patient was a laborer, fifty years of age, whose leg was so nearly severed by rail-cars, that the few remaining attachments were cut, and the lower two-thirds of the leg removed previously to his entering the hospital. The soft parts were lacerated both posteriorly and anteriorly still farther towards the knee. Amputation at the knee-joint was decided upon, and this operation performed, twenty hours after the accident, by Dr. Buck, with anterior and posterior flaps: the patient not being under the influence of an anæsthetic. Inflammation of the stump arose demanding active treatment; suppuration became free, the pus burrowing among the muscles of the thigh; delirium came on with diarrhœa; these severe symptoms however finally subsided, convalescence was gradually established, and he was discharged August 1st, in good condition and with a fair stump.

The second case was that of a boy, aged 13, who entered the hospital, April 30th, with a compound comminuted fracture of the leg. The operation was performed by Dr. Buck in a manner similar to the preceding, except that the articular surface of the femur was sawn off to promote more speedy granulation, and the patient took ether. Active inflammation

set in requiring antiphlogistic treatment ; suppuration followed, but not to so great an extent, as in the former case. At this stage of the cure he was treated as the former, with tonics and stimulants, and with similar results. He was discharged, August 18th, in good health, and with a serviceable stump.

The following cases were collected by Velpeau, and embrace the facts on which he based his approval of the operation.*

CASE 1.—In one of the cases mentioned by J. L. Petit, disarticulation of the leg appears to have been preferred only from a lack of instruments to amputate in the continuity. Necessity knows no law, the author judiciously remarks.

CASE 2.—The other occurred in a young man, who had exostosis and caries of both bones of the leg throughout their whole extent. The patient, who had not slept for more than two months, passed a comfortable night immediately after the operation, and continued tranquil to the completion of the cure, which would have been much more prompt, according to Petit, if they had removed the patella. We have every reason to believe that these two amputations, of which J. L. Petit was only a witness, were completely successful.

CASE 3.—A slater, who, nineteen days before, had fallen from a height of one hundred and thirty-two feet, was received into the Hospital of Dijon on the 26th of July, 1764. The leg was in a state of gangrene as high up as the knee. Hoin disarticulated the leg, and though there were not soft parts sufficient to allow of immediate reunion, the man ultimately got well. In the month of July, 1771, he was still living ; could use a wooden leg with freedom, and ascended the scaffoldings and upon roofs as he had done before the accident.

CASE 4.—Gignoux, of Valence, speaks of a young girl whose leg had been separated from the thigh by gangrene, and whose health for the last four years had been completely restored, at the time when he informed Brasdor of it.

CASE 5.—Sabatier mentions having seen a boy in whom a ball had carried away the leg without wounding the patella, but without being followed by any unpleasant consequences.

* *Archives G n rale*, t. xxiv., p. 46, and *Mott's Velpeau*, Vol. III.

CASE 6, is that of Dr. Nathan Smith, already cited.

CASE 7.—A scrofulous patient, eighteen years of age, was amputated in the same manner, in the year 1824, at the Hospital of St. Louis, by M. Richerand. A variety of accidents, such as purulent abscesses and collections, it is true, at first alarmed the surgeon, but the wound, nevertheless, ultimately cicatrized.

CASE 8.—M. Dezeimeris met some weeks ago in the streets of Paris with a male adult, who had been amputated at the knee. This person could walk with ease, but by means of a crutch, and without using his stump as a point d'appui on the artificial leg.

CASE 9.—Finally, a ninth example of disarticulation of the leg has been recorded in the first volume of the *Dictionnaire de Médecine et de Chirurgie Pratique*. The patient, who was operated upon by M. Blandin, at the Hospital Beaujon died on the sixth day after the operation, in consequence of phlebitis.

CASE 10.—In the month of January, 1830, I received into the Hospital of Saint Antoine, an orphan boy, aged 19, who was sent to me by M. Kapeler, physician in chief of the house. This young man, very poor, reduced by suffering and diarrhœa, was affected with a very extensive necrosis of the right tibia, and earnestly solicited relief at our hands. The operation was fixed for the 14th of the same month. As there was not a sufficient quantity of soft parts remaining behind, I proposed to obtain a flap in front, of a certain length. The wound reunited but imperfectly. No accident happened; and though there still remained exposed a transverse surface, an inch in width, from before backwards, which the flaps would not cover, the cicatrix, nevertheless, was completed, at the expiration of two months. This patient, whom I have often since seen, enjoys the most perfect health. The stump bears and transports the weight of the body on the wooden limb, with the same facility as if he had only undergone amputation in the continuity of the leg.

CASE 11.—A man twenty-nine years of age, of good constitution, and born in the Colonies, was sent to me at the Hospital of Saint Antoine, on the 24th of May following, by M.

Thierry, who had been sent for to him for a comminuted fracture of the left leg. Gangrene soon made its appearance, followed shortly after by an ichorous suppuration; which, becoming more and more copious, with pains excessively acute at the time of dressing, and even in their interval, and an almost continued febrile movement, with diarrhœa, &c., soon made me, on the other hand, entirely despair of saving the limb; I decided upon amputation at the knee, and performed it on the 4th of June. The febrile reaction made it necessary to bleed on the first and second day. No accidents afterwards occurred, up to the 5th; but on the 6th and 7th a superficial erysipelas made its appearance, and reproduced the fever. In spite of this inter-current phlegmasia, and of two small purulent patches, which formed at a later period at the angles of the condyles, and finally of the consequences produced by deviations in regimen, causing, in fact, a real attack of indigestion—the cure was completed by the sixtieth day.

CASE 12.—In the month of July, 1830, I had to examine, at the central Bureau of Hospitals, a young man, aged nineteen years, who had been amputated seven years before, and who came to ask for a new wooden leg. He told us that the operation had been performed upon him at the Hôpital des Enfants. The cicatrix was behind; and though the inner condyle, from being an inch longer than the other, could alone rest upon the artificial limb, he has, nevertheless, always been able to walk as well as if he had undergone amputation below the joint.

We may add to the foregoing the two following cases by Baudens.*

CASE 13.—A soldier in the skirmish at Tafna, 26th Jan., 1836, received in his right knee a ball, which, after shattering the patella, lodged in the inner condyle of the os femoris. M. Baudens having attentively examined the wound, judged that the case was one well suited to the performance of amputation in the joint itself. He commenced the first incision two inches below the patella ligament, and carried it round on each side, to a point an inch and a half below the centre of the popliteal space. The integuments in front were then carefully dissected

* *Medico-Chirurgical Review*, 1837.

upwards, as high as the upper edge of the patella ; the joint laid completely open all round, by dividing the capsular and other ligaments ; and, while an assistant compressed the popliteal vessels between his fingers, an ample muscular flap was made from the muscles on the back of the leg to cover the end of the femur. It was found necessary to remove portions of both condyles, as they had been fractured, and the ball still lodged nearly an inch and a half deep in the substance of the bone. Five ligatures were applied, and the wound was secured by three sutures. The healing process was considerably retarded by the oozing of blood from the wound ; but eventually, a good serviceable stump was obtained.

CASE 14.—A young soldier, in the action at the foot of the Atlas, on the first of April, 1836, was wounded by a musket ball, which entered immediately beneath the lower edge of the left patella, and came out in the centre of the ham. The head of the tibia was broken into several fragments. The skin of the leg being drawn strongly upwards, M. Baudens made a circular cut through the integuments. The line of this incision was kept about five finger-breadths below the inferior edge of the patella, and three inches below the condyles of the femur posteriorly. The integuments were then dissected upwards, all round, except behind ; the capsular and other ligaments divided, and, while the popliteal artery was compressed by an assistant, the posterior flap was formed by one stroke of the knife. Only one artery required ligature. The lips of the wound were held together by four stitches of the interrupted suture. The healing was speedy and perfect. The circumstance of the gunshot wound in front being above the line of the anterior flap, was rather favorable than otherwise to the cicatrization. It afforded a convenient outlet to any pus which formed. The line of the cicatrix, on the face of the stump, was situated well back in the popliteal space, so that it quite escaped pressure, when the patient used a wooden leg.

The following cases are alluded to by Velpeau, but not with sufficient detail to make them serviceable in an appreciation of the operation. De la Rocque informs us of the case of a young girl seventeen years of age, who was amputated at

the knee and recovered perfectly. Rossi reports having operated twice successfully. M. Chaumet relates a successful case by Pichozel ; an American surgeon (?) informed him that he had performed it twice with fortunate results. M. Jobert lost a patient, whose leg he had disarticulated, in consequence of suppuration of the thigh. M. Laguier operated twice, and both cases were fatal ; one of his patients had a comminuted fracture of the thigh. Velpeau himself has seen four cases terminate fatally in his own practice, three of which were in a most unfavorable condition for the operation. The first was an old man suffering from *grangrena senilis*, who died on the twenty-eighth day, in consequence of the reappearance of the mortification in the stump. The second was an extremely fat woman, with an enormous encephaloid cancer of the leg, which prevented him from preserving the integuments, except on the inner side ; she was attacked with an extensive suppuration of the thigh, a large ulcer formed upon the sacrum, and she died on the sixty-second day, the wound having, however, a good appearance. The third was a woman seventy-six years of age, who died exhausted from the long continuance of her sufferings. The fourth was a man, forty-seven years of age, strong, and in a favorable condition. In his report to the French Academy on the memoir of Velpeau on Amputation at the knee-joint, Dupuytren stated that he had performed the operation three times, but in every instance unsuccessfully. Volpi and Monteggia have each had a fatal case. In his statistics of the operations performed in the hospitals of Paris, Malgaigne gives nine cases of amputation at the knee-joint, of which seven were fatal. Mr. Fenwick, in a report of the surgical operations performed at the Newcastle-upon-Tyne Infirmary, has added to his tables of the amputations in various hospitals, a fatal case of disarticulation of the leg which occurred at the Glasgow Royal Infirmary.* This case is also published in the surgical reports of that institution, and is the only instance of this operation in Great Britain which we find on record.

In discussing the *propriety of amputation* through the

* *Edinburgh Monthly Journal of Med. Sci.*, 1847.

large joints, writers rarely discriminate between the ball and socket and the ginglymoid articulations, though the greatest possible differences exist, and the operation at one cannot be the slightest test of its application to the other. The former is a small joint, deficient in fibrous tissues, and surrounded by an immense mass of muscular structure; while the latter presents a large articular surface, but thinly covered, and that covering fibrous and ligamentous. The former has long since become an established operation in surgery, while the latter is still *sub judice*.

It is evident from the foregoing facts, which comprise for the most part the experience of the profession in regard to this operation, that many of the objections hitherto raised to amputation through the larger articulation, of which the knee-joint is the type, however plausible in theory are practically without foundation. They *prove* that the dangers from exposing a joint for the purpose of disarticulating a limb, whether of a shock to the system or severe inflammation and suppuration, are unimportant in deciding the question of the general propriety of this operation. Fearful as are the results of the inflammatory process instantly lighted up in ordinary wounds of the knee-joint, dangerous consequences from this source are rare exceptions in the severer wound, of the bisection of this articulation in amputation. It is not to be denied that inflammation of the synovial membrane, the sheaths of tendons, etc., occasionally occurs, and is attended with dangerous suppuration, but this accident is exceptional, and of remote consideration. Although from the nature of the structures entering into the formation of the soft parts of the joint, it would seem probable that troublesome and even, as in this case, dangerous hemorrhage would be a marked feature in the cure, yet it is found in practice very seldom to complicate the case. We must attribute its occurrence here to the wasted condition of the joint, by which little else was left than the fibrous tissue, which prevents that retraction and contraction of vessels essential to a spontaneous arrest of hemorrhage with nearly the same certainty as bone.

They *prove* that the mortality in this amputation, depends not so much upon the point of election, as upon those conditions peculiar to each individual case, which determine the

success of amputations in general. A careful discrimination of the causes of failure, will show that in many instances the patient was already in a hopeless condition previously to the operation, and that the amputation was undertaken with but the slightest prospect of a favorable issue. In several cases the disease was malignant, and the subject fell a victim to its progressive effects. It will show, also, that the operation has been successful under circumstances equally unfavorable; and even where disarticulation of the leg has been the result of the tedious process of sloughing, granulation has succeeded, and cicatrization completed the cure of desperate cases which the surgeon had abandoned to the resources of nature.

They *prove* finally that a stump may be formed of the articular surface of the lower extremity of the femur, which is capable of transmitting the weight of the body to an artificial limb, with no more than ordinary inconvenience. The process of healing, which was open to examination in the case reported by Prof. Pancoast, beautifully illustrates the manner in which absorption, granulation and cicatrization is accomplished in the preparation of the articular surface, and its union with the integuments, and refutes many of the preconceived opinions of theorists in regard to the mode as well as to the possibility of their occurrence. Nor does the bulbous extremity of the thigh-bone, as has been alleged, interfere with the adjustment of an artificial leg, so that the weight which the stump has to bear shall be distributed upon the sides of the limb, equally as well, as in any other form of stump. This is the opinion of a manufacturer, who has adapted artificial legs to such stumps.

These facts lead to the following conclusions: 1. That amputation at the knee-joint is a justifiable operation, as respects the nature of the structures engaged. 2. That it is a justifiable operation as respects the point of election. 3. That the stump formed by the articular surface of the lower extremity of the femur, is as well adapted to the adjustment of an artificial limb, and to sustain and transmit the weight of the body, as when the operation is performed in the continuity of the thigh-bone.

We are aware that many are prepared to question not so much the point selected for performing the operation, as the

propriety of operating at all under the circumstances. The rule which forbids the amputation of a limb, deformed from infancy, or by disease, simply to remove the deformity, at the request of the patient, *amputation de complaisance*, is, in general correct, for the object sought is too trifling to warrant the hazard which the operation involves. It is a well established fact, in amputations practised under these circumstances, that the good health of the patient confers no immunity from the ordinary dangers of the operation. But when, as in the present instance, there is superadded to a deformity of the limb, materially interfering with the occupation of the patient, such a pathological condition as exposes it to accidents of a troublesome and even dangerous character, the propriety or rather the necessity of the operation, is evident. The advantages to be gained by its successful issue more than counterbalance the risk that is run, and the question is not one so much for the surgeon, as for the patient to decide.

The *operation* is performed as in amputations in general, by the flap, the circular and the oval methods. The *flap* may be single or double; when *single*, the flap is made from the calf; this is the original operation of Hoin. When *double*, they may be anterior and posterior, or external and internal; the former was first described by Dr. Nathan Smith, and has already been given in the history of his case; the latter is that pursued by Rossi. The *circular* operation was first performed by Velpeau, and subsequently by Blaqui  re. The *oval* method has been differently described by Baudens and S  dillot, the former making the apex terminate in the ham, the latter in front, while M. Velpeau has made the oval transversely. This process is not one of general adoption, but to be resorted to, only when the deficiency of integuments makes it the most expedient. The modifications of the operation made in this country, are by Drs. Nathan Smith and Pancoast. The original operation of the former has already been detailed; the latter thus describes his method:

“The patient is to be placed upon the abdomen. The surgeon, placing the thumb and forefinger upon the condyles of the tibia, at the opposite sides of the leg, makes with a common scalpel on the front of the upper part of the leg, a semi-lunar incision, which extends as far as three inches below the

tubercle of the tibia, one extremity resting on either side, an inch below the joint. The flap of skin is now to be rapidly dissected towards the joint. The leg is then to be extended and made horizontal. The point of the knife is next to be entered through the skin, at the middle of the back part of the leg, an inch and a half to two inches below the fossa of the popliteal space, and carried vertically downward for the space of three inches. From the lower end of this, the knife is to be continued round, on one side, to strike the line of the first, or anterior incision, so as to mark out a second flap, convex downwards, and extending a little lower than that of the one in front. The lower end of the vertical cut is then united by a similar convex sweep of the knife to the other margin of the front incision, so as to form a third flap. The two posterior flaps are next to be dissected from the fascia up to their base. The leg is now to be again flexed, and from the general loosening of the flaps, already made, the insertion of the ligamentum patellæ upon the tibia will be exposed. This is to be divided across, and the joint opened upon the front and sides, so as to leave the semilunar cartilage on the head of the tibia; the crucial ligaments, as they become subsequently useful as a nidus for granulations, are to be divided at their connection with the latter bone, and the posterior ligament lastly cut. The leg, which is now loose, is to be twisted on the thigh. An assistant grasps the popliteal artery with his thumb and finger, and the surgeon divides below at one stroke with the knife the remaining parts, consisting mainly of the two heads of the gastrocnemius, some of the hamstring tendons not previously cut, and the popliteal vessels and nerves. The patella is to be left in its position. The whole operation may be done with the scalpel; the femoral artery should be compressed with the tourniquet."

The method of operating in this case was that of the double anterior posterior flap, nearly after the manner of Dr. Nathan Smith, without, however, any previous study of the different methods which have been pursued, but merely adapting the double flap to the circumstances found existing at the articulation in this individual case. As far as relates to covering the condyles, and forming as good a stump as the nature of the tissues surrounding the knee-joint would admit, the

procedure was satisfactory, and promised a favorable result. The removal of the patella was rendered necessary from its long-continued displacement on the side of the joint. This should not ordinarily be done, for its position on the extremity of the femur makes the stump more serviceable as a point of support.

Though we have expressed the opinion that amputation at the knee-joint is a justifiable operation, easy of execution, and in its issue depending directly upon the same causes as when performed in the continuity of the bone, and remotely upon the nature of the structures engaged, yet in its repetition, we should be disposed, with an important modification, to adopt the method of Mr. Syme. It has already been remarked of his operation that it is not what it is styled, "amputation at the knee-joint," in the sense in which we have been considering it. Although the primary steps are those of disarticulation of the leg, yet it concludes with making a section of the lower extremity of the femur, and removing the entire joint. At this stage of the operation a modification suggests itself, which, though not yet put in practice, seems to us to be an important improvement. It is, instead of removing the patella, to allow it to remain, and adapt it to the cut extremity of the thigh-bone, in order that ankylosis may take place, and this bone will then become the point of support on the extremity of the future stump. This modification would combine all the advantages of amputation, through the articulation and obviate most of the objections, fancied or real, hitherto and still raised to that operation.

Summary of cases occurring in American Practice.—Whole number twelve, of which three were fatal, two required amputation of the thigh, and seven were completely successful, being a mortality of one-fourth, or twenty-five per cent. Of the seven successful cases, the *causes* of amputation were—injury, 1; chronic diseases, 2; gangrene, 2; not given, 2. Of the fatal cases, there were—injury, 1; gangrene, 1; burn, 1. Of the two requiring re-amputation, 1 was for a chronic disease and 1 for gangrene. The period of death in the fatal cases varied from 3 to 26 days.

Summary of cases occurring in Foreign Practice.—Whole number, including those published by Malgaigne, 37, of which

18 were successful and 19 fatal, giving a mortality of over 51 per cent. Excluding Malgaigne's cases, some of which are probably included in the other reports previously noticed, and it stands—whole number, 28; fatal, 12; successful, 16; being a mortality of nearly 43 per cent. No further summary can be given which will be of value. We may here notice that Jaeger is reported to have collected 37 cases, of which 22 were successful. Doubtless he obtained some facts through the same channels which have been open to us, and hence a certain degree of allowance should be made for the probable repetition of cases in the following table :

General Summary of the Operation of Amputation at the Knee-Joint.

	Whole No.	Died.	Cured.	Ratio of Mort.	Per Cent.
In American Practice,	12	3	9	1 to 3	25
In Foreign Practice,	28	12	16	1 to 1 $\frac{1}{3}$	42 $\frac{6}{7}$
Malgaigne's Collection,	9	7	2		77 $\frac{1}{9}$
Jaeger's do.	37	15	22		40
Total,	86	37	49		43

ART II.—*Contributions to the Practice of Midwifery : being a selection of Cases from Private Practice, with Remarks.* By SAMUEL S. PURPLE, M.D. [With illustrations.]

THE following cases have been thought to possess sufficient interest to deserve a permanent record. Although not entirely unique, some of them are of sufficiently rare occurrence as to be but seldom met with, even by the most experienced; and, consequently, may often occasion no small amount of doubt and perplexity when occurring in a necessarily limited rural practice.

CASES OF UNAVOIDABLE HEMORRHAGE OR PLACENTA PRÆVIA.

CASE 1.—On the 27th of June, 1846, was requested by Dr. Hunter to visit Mrs. H——, of No. 27 Vestry-street, who, it was said, was seriously ill from hemorrhage. On my arrival at

her residence, learnt that she was about seven and a half months advanced in her second pregnancy ; that, on the 13th inst., she had spent the day on a pleasure excursion—came home somewhat fatigued, and, on retiring for the night, noticed that she had a slight bloody discharge from the vagina. This bloody discharge continued to increase gradually until the 25th, when, for the first time, she consulted her physician. At this time she complained of pain in the back, difficulty of voiding urine, and, on the least exertion, profuse sanguineous discharge from the vagina. No vaginal examination was instituted, but she was immediately ordered to observe perfect rest in bed, and every third hour a powder, containing viii. grains of pulv. ipecac. et opii and iv. of acetate of lead, cool drinks and low diet. Under this treatment there occurred but little hemorrhage during this and the following day, excepting when the erect position was assumed for the purpose of voiding urine—at such times it was somewhat profuse, and accompanied with the discharge of coagula.

On the morning of the 27th, considering herself sufficiently able to rise and attend to some trifling domestic affairs, she made the attempt, and two hours after, on rising from a chair, was seized with a profuse and alarming hemorrhage, which soon produced complete syncope. It was in nearly this condition that I found her on my arrival—presenting all the usual symptoms of a female laboring under an alarming hemorrhage. On making a vaginal examination, the vagina was found filled with coagula, and the os uteri dilated to the size of a half dollar, firm and unyielding, the placenta attached to the cervix on all sides, and, consequently, directly over the os. The vagina was at once filled with a tampon of old linen, and stimuli were freely administered. As soon as the syncope had in a measure subsided, and consciousness had returned, she began to complain of slight pain in the back, at the same time the uterus was observed to become firm and prominent, as if undergoing contraction. A full anodyne was given, and she was allowed to remain for four hours. The pains during this period having increased considerably, and the hemorrhage not having subsided, the patient's pulse 130 per minute and faltering, the respiration hurried but regular, I resolved upon an examination per vaginam, and, in the event of finding the

os uteri soft and dilatable, to entirely detach the placenta and seize the feet of the child and deliver. The patient, for this purpose, was removed so as to bring the hips as near to the edge of the bed as possible; a warm brandy sling with half an ounce of wine of ergot were administered, the tampon was removed, and finding all things favorable, the placenta was detached entirely, the hand carried into the uterus, the feet of the fœtus were seized and brought down; a few moments' rest were now allowed the patient, more brandy and wine of ergot were administered, and the delivery of a feeble but yet living child was then effected. The placenta immediately followed.

The patient being much exhausted, an anodyne and stimulating draught was administered, and warmth was applied to the body and inferior extremities. In two hours she had so much improved that she was left with the nurse, with instructions to diminish the stimuli gradually, and substitute animal broths instead. Six hours after I found my patient with a pulse of 116, and in a quiet slumber. Both mother and child continued to improve, and in two weeks after were well.

CASE 2.—On the 8th of May, 1847, was requested to visit Mrs. L——, No. 48 Hubert-street. She was near the eighth month of gestation with her fourth child. On arrival at the house found that, for near three weeks, she had been the subject of uterine hemorrhage, which had been at times profuse, and, during the last twelve hours, attended with slight paroxysmal pain in the back. I found her in bed somewhat exsanguinated, and with a pulse of 120 per minute. On making a vaginal examination the os uteri was but little dilated, scarcely sufficient to admit the finger, and so high up in the pelvis as to render the diagnosis extremely unsatisfactory. Believing the case to be one of threatened miscarriage, the result of too much physical labor, perfect rest was enjoined and an anodyne draught, containing fifty drops of tinct. opii, was administered. The next day the hemorrhage had nearly ceased, and she was ordered to take, morning, noon, and night, a powder, containing six grs. of pulv. ipecac. et opii, and three of acetate of lead until it had entirely subsided. On the 16th of May I was again called to see her in great haste. During the evening of the preceding day she had been seized with flood-

ing, which had continued to recur upon the slightest exertion. On examination found the os uteri dilated to the size of half a dollar, the vagina filled with coagula, and could distinctly feel the placenta covering the cervix uteri. As she was already much exhausted and the hemorrhage continuing, the vagina was immediately filled with a tampon of old linen, and a T bandage applied. Stimulants were now administered more freely, and warmth applied to the inferior extremities. In the course of an hour the pulse had diminished somewhat in frequency and increased in volume, and she began to complain of a sensation of weight and deadness in the pelvic region, and, at the same time, observed that she had not "felt life" since the occurrence of the hemorrhage, which took place the day previous. As the patient was somewhat inclined to sleep an anodyne was administered, from the effect of which she slept for two hours.

On awaking from her repose she complained of slight pain in the back, and soon a fit of coughing came on, and, following it, a sudden and profuse flow of blood per vaginam; the countenance became pale, the pulse disappeared and the respiration gasping. Placenta prævia being ascertained, the tampon was readjusted (for it had, in the paroxysm of coughing, been expelled,) warm brandy and wine of ergot were administered, and repeated at short intervals. Under this mode of treatment the patient soon began to revive, and, in the course of two hours, a moderately full pulse and warm extremities were the result. The patient, too, complained of considerable pain in the back, and there were evident uterine contractions, at each recurrence of which there was some hemorrhage from the vagina, notwithstanding the large size of the tampon.

Having now satisfied myself that the ergot was acting, I resolved to remove the tampon, and provided the os uteri was sufficiently dilated, to proceed at once and deliver my patient. For this purpose she was carefully placed near the edge of the bed, a full draft of warm brandy and wine of ergot was administered, and, after a few moments, the tampon was removed, and the os uteri being considerably more dilated than at the previous examination, and easily dilatable, the placenta was separated from the left side of the cervix only, the membranes ruptured and the feet seized and brought down into the vagina;

more ergot was now administered, and the delivery was completed. The placenta was now detached from the right portion of the cervix uteri, and the hand, together with it, expelled by the uterine contraction. The child was dead. A considerable degree of hemorrhage, which reduced my patient to almost syncope, accompanied the delivery.

After the delivery, the patient was much exhausted; the pulse 140, respiration somewhat slow, and labored; warm brandy was administered, warmth applied to the extremities, and, in the course of half an hour, sixty drops of tinct. opii were given. In four hours after, the patient complained of slight headache—in all other respects she was quite comfortable; pulse 120, and moderately full. She was ordered to take panada, with small quantities of brandy, and, at bed-time, fifteen drops of Magendie's solution of morphine.

The next day she had slept but little, and complained of intense headache, pulse 110, and of moderate fulness; ordered ext. hyocyam. grs. xxiv. gm. camph. grs. viii. to be divided into eight pills, and one to be given every two hours until sleep is produced. The following evening she had slept six hours in all, at intervals of two hours each; expressed herself as feeling very comfortable. The same treatment was continued, and suffice it to say, that at the end of three weeks she was able to be about house.

CASE 3.—Was summoned hastily on the 20th of December, 1846, to visit Mrs. Freeman, No. 34 Watts-street, who was thought to be near the eighth month of gestation with her third child. On my arrival found the patient in a state of almost complete syncope; pulse scarcely perceptible, and so rapid as not to be computed; respiration slow and gasping; countenance palid; and, in a word, my patient almost ready to expire from loss of blood. An examination disclosed the presence of the placenta external to the vulva, and lying between the thighs. All hemorrhage had ceased. Brandy sling with wine of ergot, were immediately administered; warmth was steadily and persevering applied to the body and lower extremities. After an hour had elapsed, a very slow but gradual improvement commenced. Simultaneous with the development of the pulse, and a return of consciousness, slight

pain in the back was complained of, which, returning at stated intervals, gradually increased. On examination there was no return of hemorrhage, and the head of the child had already advanced as far as the inferior strait. The uterine contractions becoming more efficient, in the course of half an hour the delivery was completed. An anodyne with brandy milk punch was ordered at stated intervals, until sleep was produced. Twelve hours after she complained of some headache. A pill composed of three grains of extract of hyosiamus, and two of gum camphor, was ordered every four hours. Animal broths and panada and wine pro re nata.

During the following six days the headache continued, more or less severe, but finally subsided; and in two weeks she had so far convalesced as to be able to, in part, superintend her household affairs. Her recovery was perfect in five weeks from delivery.

REMARKS.—*Placenta Prævia*.—In the practice of midwifery, there does not occur probably a complication of labor much more hazardous to both mother and child than that of hemorrhage. By general consent placenta prævia is regarded as imminently dangerous to mother and child. Nægele observes that “there is no error in nature compared to this, for the very action which she uses to bring the child into the world, is that by which she destroys both it and its mother.” In the management of these cases attention must be first paid to the condition of the patient, especially when she is in extreme exhaustion. When great exhaustion exists there is but little fear of farther hemorrhage until the condition of the patient is improved. If the hemorrhage has taken place at or near the eighth month, and has been severe, and the os uteri is not, or scarcely at all, dilated, the diagnosis is attended with much difficulty; but even here the necessity of the introduction of the tampon is rendered certain. After the patient’s condition has so far improved as to be in a measure out of danger from the loss of blood that has already taken place, we may avert further immediate trouble by resorting to such measures as tend in general to prevent hemorrhage, until such times as uterine contractions are regularly established, or a recurrence of hemorrhage calls for another examination. On instituting this, should the os uteri be found

dilated, or even dilatable, so as to admit the hand, the immediate and complete separation of the placenta, followed by rupture of the membranes, and turning of the child, is the only practice which will save the greatest number of mothers and children.

There can be but little doubt but that numerous children, and not a few mothers, have been sacrificed by delay in resorting to manual interference. That there is nothing gained in waiting after uterine contractions are efficient, is certain, as from the nature of the case there can be no hope of a natural termination, unless the pains be so violent as to force away the placenta before the head of the child. This being the case, the question at once arises, as to what mode of interference will prove most satisfactory in result to the child, as well as mother. In the history of the two cases reported, the first was treated by immediate and complete separation of the placenta, the other by separating a portion only, and leaving the remainder attached, until delivery of the child was accom-

plished. In the first there was scarcely any loss of blood, while in the second the loss was considerable—sufficient to exhaust the patient almost to a pulseless condition. So far as these two cases go, and I might add that of the third also, they favor the idea of the immediate and complete separation of the placenta, as best calculated to surpress the hemorrhage, and save the patient. This view I find is also favored by the results of statistics.



Spontaneous separation of the placenta, and its expulsion before delivery of the child, is by no means a rare occurrence. Professor Simpson* has recorded the results of 141 cases, in the majority of which the placenta was expelled safely by the natural efforts. In such cases, provided no hemorrhage exists, the case may be safely left to the natural efforts of the

* Vide *Monthly Journal of Medical Science*, 1845, p. 181-183.

uterus; there is nothing to be gained by hastening delivery, for the child being already dead, and the mother in no danger, all necessity for manual delivery is done away with.

This course, however, should not be followed if the fœtus be alive. In such a case, our duty does not stop short of a decided effort to preserve the life of the child. This can be best effected by detaching the placenta, perforating the membranes and delivering by the feet, allowing of as little delay as is consistent for the ease and safety of the mother. Such a proceeding, I am satisfied, will give the best possible chance of saving the child, while at the same time it diminishes the danger of the mother by preventing further loss of blood. In the language of a recent writer,* “the natural means, therefore, of checking unavoidable hemorrhage, is the complete separation of the placenta from its attachment to the cervix of the uterus; because by this means all the uterine arteries are broken off from the placenta, and the veins are closed by the dilatation of the uterus, which is necessary to effect the separation.”

The following table, which I have enlarged from Dr. Churchill, will illustrate the frequency of placenta prævia :

Authors.	Whole No. of cases.	Cases of Placenta Prævia.
Dr. Jos. Clark, ...	14,234	20
Dr. Collins, ...	16,414	11
Dr. Ramsbotham, ...	35,743	40
Janson, of Ghent, ...	13,365	7
Mr. Earle, ...	4,320	22
Mr. Crosse, ...	1,394	2
Mr. C. Rose, ...	600	2
Mr. Bailey, ...	2,819	5
Dr. Toogood, ...	1,135	1
Dr. J. Lee, ...	850	4
Mr. Taylor, ...	1,037	2
Drs. McClintock and Hardy, ...	6,634	8
Dr. Churchill, ...	1,525	1
Mad. Boivin, ...	20,357	8
Dr. Merriman, ...	2,947	7
Dr. J. Reid, ...	3,350	3
Mr. Lever, ...	4,664	14

Thus it will be seen that in 131,288 cases, there occurred 157 cases of placenta prævia, or about 1 in 837 cases.

* Vide *Lectures on the Principles and Practice of Midwifery*. By E. W. MURPHY, M. D. London: 1852; p. 333.

CASES OF RUPTURE OF THE UTERUS.

CASE 1.—On the 13th of April, 1846, I was called by a medical friend to assist in making a post-mortem examination of Mrs. Earle, at No. — Laurens-street. She was about thirty-five years of age; and on the evening of the 11th instant was taken in labor at full term, with her seventh child. The labor progressed favorably for some four or five hours, when all of a sudden the pains ceased; the patient complained of being very chilly, and of great pain in the left iliac region. The cramp-like pain increased; the abdomen became more prominent; the patient's countenance indicative of extreme anguish; great prostration and sinking soon came on; the pulse became very rapid, small and fluttering; vomiting of a greenish *fluid* ensued; the respiration hurried and difficult; the abdomen tympanitic, hiccough, and extreme restlessness, with coldness of the surface and a clammy perspiration; and finally death supervened about twenty-four hours after labor pains had ceased. An attempt was made, as the head was low down into the pelvis, about five minutes after death, to deliver with the forceps, which proved unsuccessful. There was no recession of the head after the occurrence of the rupture.

Post-mortem examination eleven hours after death. An external inspection of the body disclosed the abdomen prominent, and the presence of the child easily defined through the abdominal parietes. On making an incision through the abdominal walls, the fœtus, covered with the membranes, was found within the peritoneal cavity. The head of the child alone lay in the pelvis, firmly impacted in the inferior strait, and it required no small amount of force to dislodge it. The placenta had also escaped from the cavity of the uterus. The rupture had occurred through the left portion of the neck of the uterus, near its union with the vagina. Its edges were irregular, and evidently softened from the presence of the inflammation, which had supervened after the accident. The cavity of the pelvis was filled with coagula. The abdomen with a large quantity of bloody-colored serum. The peritoneal covering of the intestines exhibited extensive marks of inflammation,

—the intestines being glued together by fibrinous effusion. The peritoneal covering of the uterus was deeply injected, and covered with fibrinous patches. The ovaries were softened, from the presence of the occurring inflammation. In the right ovary was found a body about six lines in diameter, containing a small cavity; its walls were white, surrounded by a yellowish radiated portion. This body was evidently the corpus luteum of pregnancy.

CASE 2.—At 3 o'clock, A. M., April 17th, 1845, I was summoned by Dr. P——, to No. 504 Pearl-street, to see Mrs. Healy, who, it was said, was in labor with her fifth child. On arriving at the house, the doctor informed me that she was taken in labor near dusk the preceding evening; that the labor progressed without any untoward event until an hour previous to my being summoned. At midnight the membranes ruptured, after which the pains becoming more severe, the head steadily advanced until about 2 o'clock, when she was suddenly seized with a violent cramp in the belly, and stated that something had given way. At this time the expulsive pains ceased, but the *cramp pain*, which she referred mainly to the region of the umbilicus, continued. Her countenance immediately became anxious and pale; pulse feeble and irregular; and respiration hurried. She complained of a sense of suffocation, and tossing her arms uttered low and short moans. Vomiting of a greenish fluid supervened, followed by collapse, and death a few moments before my entrance into the room. On instituting a vaginal examination, the head of the child lay low down almost in contact with the perineum. All arguments were unavailing in inducing the friends to allow of cæsarean section, although no signs of fœtal life could be discovered.

Autopsic examination made ten hours after death.—A foot and leg could be distinctly felt through the abdominal walls. An incision through the abdominal parietes, disclosed the fœtus in the peritoneal cavity, which also contained the placenta and a large amount of coagulated blood. The body of the uterus was found contracted, and on the right side of the neck, near its union with the vagina, there existed a

large ragged rupture. The parietes of the uterus near the rupture were softened, and required no great force to produce separation. The right ovary contained the corpus luteum. The left ovary was transformed into a cyst, that contained about eight ounces of albuminous fluid.

REMARKS.—*Rupture of the Uterus* is not, as one would naturally infer from these cases, necessarily a fatal accident to the mother. Numerous cases have been reported from time to time in periodical medical literature, which prove the truth of this statement. Two cases of this kind are reported in the new Series of this Journal, vol. v., p. 331 ; and vol. vii., p. 328 ; the first by Dr. Hartt, and the second by Dr. Maxwell, both of this city. There is also a successful case reported in *The Annalist*, vol. i., p. 37, by Dr. Guernsey, of this city. Dr. Trask* has collected the outlines of three hundred and three cases of this accident ; of this number one hundred and fifty-four were delivered by artificial means, fifty seven of which recovered, and ninety-seven died ; of eighty-nine abandoned undelivered, twenty-four recovered, and sixty-five died ; and of thirty-one delivered by natural efforts, eleven recovered and twenty died.

The frequency of rupture of the uterus, may be seen from the following table, compiled from authorities within our reach :

Authors.	Whole No Cases.	Cases of Ruptured Uterus.
Dr. Collins, ...	16,414	34
Dr. Merriman, ...	2,947	1
Dr. Joseph Clarke, ...	10,387	8
Janson, of Ghent, ...	13,365	1
Dr. Ramsbotham,†	48,719	11
Dr. Toogood, ...	1,135	2
Dr. M'Keever, ...	8,600	20
M. Pacaud, ...	4,180	2
Dr. Wagstaff, ...	1,200	3
Dr. Reid, ...	3,250	1
Dr. Lever, ...	4,664	3
Drs. McClintock and Hardy, ...	6,634	9

Thus we find that in 121,495 cases, rupture of the uterus occurred 95 times, or a little over 1 in 1278 cases.

* *American Journal of the Medical Sciences*, Vol. XV., N. S., p. 104—383.

Those *symptoms* which may be considered when viewed collectively as diagnostic of rupture of the uterus, are usually well marked, and may be noticed as follows :—1st. The occurrence of a severe and sudden pain, unlike usual labor pain, attended on rare occasions with audible noise, and a sensation of something giving way in the abdomen. 2d. Vomiting followed by chills, extreme debility and prostration of strength, and on rare occasions by sudden collapse and death. 3. Sudden cessation of labor pain^s—though this does not by any means invariably succeed rupture of the uterus, followed frequently by a discharge of blood from the vagina, and soon after by a gradual cessation of the auscultory signs of beating of the fœtal heart. 4th. Recession of the presenting part, followed frequently by the limbs and body of the fœtus becoming discernible through the abdominal parietes, and the cessation of the accustomed movements of the child. 5th. Continued excruciating cramp-like pain, followed soon by vomiting of a coffee-ground colored or black matter; pale and ghastly countenance, surface cold and bedewed with a clammy perspiration; a feeble, small and fluttering pulse; and in a few cases by a certain amount of reaction. 6th. A tumid and distended abdomen, extremely painful, great restlessness, and occasional delirium, which after a time is succeeded by difficult respiration, collapse, and finally death.

In this enumeration of symptoms, it has not been our intention to mention all those which *may* arise in cases of rupture of the uterus, but only those which generally become manifested on or immediately after the occurrence of this accident. That there may be absent in certain cases all symptoms of rupture of the uterus, and that in others symptoms may vary, according to the location and extent of the rent, is certain; and hence it may be easily and correctly inferred, that no one symptom is always diagnostic of its occurrence, and that it is only by taking the whole assemblage of symptoms together, into account, that we can arrive at a correct conclusion, as to the existence of the accident in a given case.

The rule of action, in cases of rupture of the uterus, which is confirmed by the results of statistics, is that of accomplishing delivery as soon after the rupture has occurred, as the

diagnosis is positive or certain. Nothing is gained by delay ; on the contrary, the danger is materially augmented. As to the mode of delivery, that should depend upon the circumstances of the case. In the first case reported, I am satisfied that the impaction of the head was so great, that no attempt to deliver by the forceps could possibly have proven successful ; for it will be remembered, there was no recession of the head after the occurrence of the rupture ; neither was there any after death ; and, at the *post-mortem* examination, it required a good degree of effort to withdraw the head from the pelvis. In this case, perforation of the head of the child was the only operation which would best offer any hopes of a successful issue of the case. In the second case, the early application of the forceps might have been resorted to, immediately after the accident, with some probability of success. Had I seen this case sufficiently early, an attempt, at least, would have been made at delivery.

In the event of the child having escaped entirely from the cavity of the uterus into that of the peritoneum, and the uterus contracting, then we have the grave question of gastrotomy suggesting itself—and this, too, for the obvious reason, that the rent becomes contracted in proportion as the uterus contracts, and “the child can never be returned through a contracted rent, having passed through it while the uterus was yet undiminished in size.” Of the success of this operation Dr. Trask's statistics inform us, that in the sixteen cases which he has collected, in which the child escaped from the uterus into the cavity of the peritoneum, twelve were saved and four lost. Now if we turn to the result of like cases, treated by the plan recommended by Hunter and Denman, *i. e.*, by leaving them to nature, we find, that in thirty-five cases twenty-three died, and twelve were saved. Thus, it will be seen, that the greatest possible chance in our power, is offered in this kind of cases, by the early performance of gastrotomy. On this subject, one of the greatest of living American authorities thus expresses himself:—“I am firmly convinced, that should I be called this day to the conduct of such a case, I should feel bound by my conscience to recommend a delivery by a gastrotomy operation. * * * * * I express

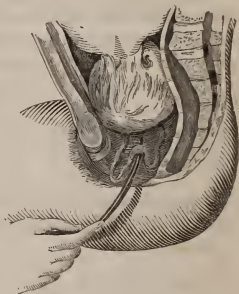
this opinion here upon a most vivid recollection of the distress which I occasioned to an unfortunate woman, who, in consequence of a laceration affecting the posterior wall of the vagina, and the vaginal cervix, drove her child into the cavity of the belly. As the head could be touched, and as the child was dead—nearly twenty hours having elapsed since its escape from the uterus—I made use of the perforator, and then taking hold of it through the opening, with my embryotomy forceps, I used all the force which it was possible for me to employ, in drawing it away through the natural passages. The unfortunate woman, who bore the rude operation with the greatest constancy and courage, lingered many hours after its close. The events of this case, which, peradventure, might have had a happier conclusion, by means of the gastrotomy operation, have impressed me, more than a thousand arguments could do, with a deep conviction of the cruelty of such a mode of delivery; and I repeat here, in the most distinct terms, my decided preference for a delivery by means of an incision through the linea alba.”*

CASES OF DIFFICULTY, ARISING FROM DEVIATIONS IN THE
NATURAL POSITION OR CONDITION OF THE UMBILICAL
CORD.

CASE 1.—On the 12th of January, 1846, was called by Dr. W. C. Parker, to visit Mrs. —, 29 Centre-street, in labor with her third child. On my arrival, learnt that she had been in labor about four hours, when Dr. P. was called to attend her. On instituting an examination, he found that the membranes had ruptured, and that the head of the child lay in the pelvic excavation, and a loop, four inches in length, of the umbilical cord, lay external to the vulva. The pulsation of the cord could be detected but faintly. The uterine contractions were but moderate. In this state of affairs, our only plan was to push back the head of the child as gently as possible, and then return the cord into the uterine cavity. This was done, but it immediately became prolapsed again. Before returning it

* *Obstetrics, the Science and the Art*; By C. D. MEIGS, M. D., 1852, p 520.

a second time, the following course was resorted to :—An ordinary gum elastic catheter, of moderately large size, was procured. A piece of linen tape, about four lines in width and two feet in length, was placed around the centre of the prolapsed portion, and then the ends were, by means of a piece of common wire, drawn through the eye of the catheter, and so through the whole length of its central cavity. The ends of the index and middle fingers, grasping the cord at the point where the tape surrounded it, were now made use of, to return the prolapsed portion within the cavity of the uterus ; and then, by means of the catheter, the cord was pushed high up within its cavity. This was easily accomplished, and the cord was thus very readily retained *in situ*. Two drachms of wine of ergot were now administered ; and soon after, uterine contractions becoming more efficient, the head descended, so as to engage with the inferior strait. In the course of an hour, the complete delivery of a living child was effected. Both mother and child continued to do well.



CASE 2.—On the 16th of October, 1850, was called to attend Mrs. S——, 178 Franklin-street, in confinement, at full term with her first child. She had been in moderate labor about sixteen hours. On instituting a vaginal examination, the os uteri was found but little dilated, and the head high up, scarcely engaged with the superior strait. As she was comparatively comfortable and in good spirits, there was nothing ordered to be done. Twelve hours after, the head had passed through the os uteri, and during the presence of pain would partially engage with the inferior strait, but recede again during its absence. The membranes were now ruptured, and the uterine contractions became more expulsive. Half an hour after the patient was suddenly seized, immediately after a pain, with vomiting and chills, followed by a discharge of a considerable

quantity of blood per vaginuum. A rapid pulse, and hurried respiration, and cold surface. Stimulants combined with wine of ergot, were administered, and external warmth was resorted to. In the course of half an hour moderate reaction came on, the pains returned, the head ceased to recede during the interval of pain, and in about one hour after my patient was delivered of a dead child. The placenta, together with a large amount of coagula, followed by the same pain. The child was completely exsanguinated, and bore the appearance of having died from loss of blood. *The umbilical cord was six and a half inches in length*, from its insertion into the placenta to the umbilica of the child. The uterine surface of the placenta was covered with coagula.

CASE 3.—October 9th, 1851. Was called to attend Mrs. C—, No. 502 Greenwich-street, who was in labor with her sixth child, at or near the eighth month of gestation. On examination, the membranes were ruptured, and the head of the child already engaged with the inferior strait. There was oozing from the vagina an offensive fluid in moderate quantity. On questioning my patient, I found that she had not felt any movement of the child since she supposed herself to be near six and a half months pregnant. That there had existed since about that time a sensation of coldness and weight in the lower portion of the abdomen, and the breasts had diminished in size and firmness. From these circumstances she had come to the conclusion that her child was dead. She stated that she knew of no cause to give rise to such a result. In half an hour after my arrival, she was delivered of a dead and slightly decomposed child. The placenta was with considerable difficulty removed, by the introduction of the hand. On making a careful inspection of the placenta and umbilical cord, the latter was found, as will be seen in the accompanying illustration, *tied in a firm knot*; sufficiently tight to completely obstruct all circulation through it, as was evinced by the fact that an injection could not be made to pass through it. The convalescence of Mrs. C. was, as might be expected, extremely slow.



CASE 4.—For the notes of the following interesting case, I am indebted to Dr. Fleet, of this city, in whose practice it occurred. Mrs. G——, the mother of three children, was seized with symptoms indicative of miscarriage, in August, 1851. She believed herself to be about six months advanced in gestation. A course of treatment adapted to the necessities of the case was resorted to, but without having the desired effect. On the following day, about twenty-four hours after the first visit, on attempting a vaginal examination, the breech was found presenting, and as it was low down, an attempt was made to deliver the right leg. Failing in this, owing to some unaccountable obstruction, the left leg was delivered, and then, with some little delay, the right was brought down, so as to ascertain that the cord was tightly fastened to it just above the ankle. Traction was made upon the funis, and the finger passed between the cord and the leg, so as to lessen the tension sufficient to extricate the leg from the coil. In doing so, it was found that the funis was somewhat adherent to the leg, around which it was turned. On extricating the leg from the funis, the delivery of the child was easily effected, and the cord was found to be around the neck also.

On inspection after delivery, the leg, at the point where the cord passed around it, was found almost amputated; in fact entirely so but the bones—the tibia and fibula only remaining. The annexed cut illustrates the character of the amputation, and the extent to which nature had carried it.



REMARKS.—*Prolapsus of the funis* is a complication of natural labor of not very frequent occurrence; but one of great danger to the child. So much so is this the case, that we find that the mortality is greater in this than in any other order of practicable labor. As illustrating its frequency and mortality, the following are the most complete tables which we possess.*

* Enlarged and revised from *Theory and Practice of Midwifery.* By F. CHURCHILL, M. D., Philadelphia Edit., 1851, p. 410.

1. *Frequency of Occurrence.*

BRITISH PRACTICE.			FRENCH PRACTICE.		
Authors.	Total No. of Cases.	Pro-lapse of Cord.	Authors.	Total No. of Cases.	Pro-lapse of Cord.
Dr. Bland, ...	1,897	1	M. Baudelocque,	17,499	41
Dr. Joseph Clarke, ...	10,387	66	Mad. Boivin,	20,517	38
Dr. Merriman, ...	2,947	8	Mad. Lachapelle,	15,652	26
Dr. Granville, ...	640	1	M. Mazzoni,	452	18
Edinb. Lying-in Hospital,	2,452	3	GERMAN PRACTICE.		
Dr. Collins, ...	16,414	97	Authors.	Total No. of Cases.	Pro-lapse of Cord.
Dr. Cusack, ...	398	5	M. Richter,	624	4
Dr. Maunsell, ...	839	2	A. E. v Siebold,	492	2
Mr. Gregory, ...	691	7	Dr. Voigtel,	29	1
Dr. Beatty, ...	1,182	6	Dr. Jansen,	13,369	86
Mr. Lever, ...	4,666	6			
Dr. Reid, ...	3,250	16			
Mr. French, ...	89	1			
Dr. Churchill, ...	1,525	7			
Drs. McClintock & Hardy,	6,634	37			
Mr. Bailey, ...	2,860	9			
Mr. Copeman, ...	1,037	5			

Thus in British practice it occurred 277 times in 57,908 cases, or about 1 in 209; in French practice, 123 times in 54,529, or about 1 in 443; and in German practice, 93 times in 14,514 cases, or about 1 in 156. In the total number, 126,542 cases, we have the accident occurring 492 times, or about 1 in a fraction over 257 cases.

2. *Mortality of the Accident.*

Authors.	Case of Pro-lapse.	Child'n lost.	Cord re-placed.	Deliv'd natural-ly.	Deliv'd by Version.	Deliv'd by Forceps.
Mr. Gifford, ...	21	17	2		15	5
Dr. Smellie, ...	6	2			5	
Mr. Perfect, ...	4	3			4	
Dr. Joseph Clarke, ...	66	49				
Dr. Merriman, ...	8	4				
Dr. Ramsbotham, ...	1	1			1	
Dr. Collins, ...	97	70				
Dr. Cusack, ...	5	5				
Mr. Gregory, ...	7	4				
Dr. Beatty, ...	6	4				
Mr. Lever, ...	6	2				
Dr. Churchill, ...	7	5				
Drs. McClintock and Hardy	37	25	5	6		
Mad. Boivin, ...	38	9			25	13
Mad. Lachapelle, ...	26	7	2	1	10	13
Dr. Voigtel, ...	1	11			1	
Dr. Jansen, ...	86	34			46	6

Thus it will be seen, that out of 392 cases of prolapse of the funis, 245 children were lost; or, a mortality of nearly 2 cases out of 3. This table of the mortality illustrates also the success of the different modes of treatment.

Short umbilical cord.—It is an occurrence of extreme infrequency to meet with a funis under six inches. At least it is, if I may trust to the results of statistics, and the declarations of numerous observers. Dr. Churchill, in a very learned and elaborate paper, says that “extremely short cords must be very rare, since, out of 500 cases, none were under twelve inches;” and, again, *Dr. Davis* says that a cord of two inches long has been met with; Guillemeau, one of two inches and a half; Montault, one of four inches; Meissner, one of five inches; Mauriceau, Baudelocque, and Morlanne, one of six inches; Haighton, one of seven inches; Dr. Klugè, one of eight inches and a half; and Dr. Montgomery, two of eight or nine inches.” Dr. Hamilton† has also seen two cords in which the “length could not have exceeded six inches;” and Dr. Storer‡ has reported one of four and a half inches. On referring to the different authorities within my reach, I find no mention made of the occurrence of internal hemorrhage arising from partial or complete separation of the placenta from a short funis. That this was the case in the second case reported, under this head, there cannot be even the shadow of a doubt. Neither can there be a doubt that, in the partial separation of the placenta, in these cases, like that of all others, there exists the greatest danger. A danger which can only be averted by complete separation taking place, or the practitioner resorting to the forceps for the purpose of completing the delivery.

Knots on the funis are by no means of rare occurrence. Not so, however, with the danger that possibly may result from them in certain cases. In the third case reported under this head, there can be scarcely a doubt but that the knot found on the cord was the cause of the death of the fœtus. The knot, it will be remembered, was firm, and would not ad-

* *Researches on Operative Midwifery*, Dublin, 1841, p. 265, 263.

† *Practical Observations*, Part ii., p. 69.

‡ *New-York Jour. Med. & the Collateral Sciences, New Series*, Vol. VI., p. 140.

mit of an injection to pass through the arteries or vein. There is an important medico-legal question hanging upon the possibility of this occurrence. In cases of children found dead under suspicious circumstances, with knotted cords, it has been supposed that they might have been formed after death; and it is a matter of some consequence to ascertain whether they could produce such serious effects.* The case reported proves to my mind, conclusively, that a knot in the funis can produce death of the fœtus in utero, and abortion follow as the consequence. While recording my own convictions on this point, a strong example recurs to my mind, in the case reported and illustrated by Dr. Jameson† of Baltimore, where the body of the fœtus was caught around the abdomen, and nearly severed, in a knot tied in the funis, thus causing the death of the fœtus and abortion. In this case, to use Dr. J.'s own language, "the whole appearance was such as most clearly evinced that it had, long prior to its death, become entangled in its umbilical cord, that the head must in some way have slipped through a noose, occasioned, probably, by an unusual length of the cord, and that it had pined away gradually, as the knot became closer, and thus finally destroyed it." The adjoining is a copy of the illustration of the case to which Dr. J. refers.



Spontaneous amputation of the limbs in utero is a condition which has more or less attracted the attention of careful observers. In 1832 Dr. Montgomery, of Dublin, published, in the *Dublin Journal of Medical Science*, two papers on the subject, in which he first explained, in part, the real nature of the accident, and there is reason to believe that he has done more than any other writer to direct attention to a right knowledge of this interesting and curious phenomena. In

* *Churchill's Operative Midwifery*, p. 277.

† *American Medical Recorder*, Vol. VI., p. 292. 1822.

1837 this paper was revised and enlarged,* and in it may be found several excellent illustrations of this accident. Mr. Watkinson, in the 54th volume of the *London Medical and Physical Journal*, has reported a case in which the left foot, at nearly the same point of the one last reported, was entirely amputated in utero; and in the xviiiith vol. of the *American Journal of the Medical Sciences*, Dr. Fitch, of New Boston, N. H., has reported a case in which the right foot of a fœtus was discharged per vaginam, fifteen days previous to the delivery of the child. On the birth of the child the right foot was wanting; the stump "terminated abruptly, and over the end the skin had contracted uniformly from every side towards the centre, without, however, forming a complete cicatrix." The foot was, when discharged, in a perfect state of preservation. Dr. A. H. Buchanan,† of Tenn., has reported a case, and exhibited the specimen to the Medical Society of Tennessee, in which abortion took place between the third and fourth months of gestation, and on inspecting the fœtus the funis was found twice twisted around its neck, and once looped around the right thigh. From the condition in which the fœtus was found, says Dr. B., "it is evident that any efforts made by the child to extend the thigh tightened the cord about the neck, and also about the thigh, as well as dragged upon its umbilical extremity and obstructed the circulation. * * * *

It is very fair to conclude that the fœtus, thus situated, came to its death either from the compression of its throat by the cord, or from its obstructed circulation, or from both; and that the abortion was the consequence of its death. * * *

* * It may be seen by any present that, at the point of compression (where the cord twists around the thigh), only the integuments intervened between the cord and the bone, all the parts having disappeared; but the limb below the ligature appears as fully developed as its fellow, and the integuments immediately under the ligature appear sound."

A case, in most respects a complete analogue of Case 4,

* *Cyclopædia of Anatomy and Physiology*, Vol. 2, p. 324, and an *Exposition of the Signs and Symptoms of Pregnancy, &c.* By W. F. MONTGOMERY, M. D. London, 1837, p. 321.

† *American Journal of the Medical Sciences*, 1839. Vol. XXIV., p. 522.

above reported, is recorded in *Siebold's Journal*, vol. xvi., No. 2. It was that of a fœtus about three months old, which was expelled with the umbilical cord wound round the right leg, above the ankle, and forming a knot. "The development of the limb was thus completely prevented, and the leg seemed worn away down to the bones."

That the character of the change effected in this accident is that of arrest of development at the point where the cord surrounds the limb, is morally certain. The funis, so to speak, has repeatedly been caught in the act of effecting the amputation. Thus we see, in the case of Dr. Buchanan, the *integuments* and *bones* remained. In the case of the specimen here illustrated, the bones only remain to be severed to make the amputation complete; while, in Mr. Watkinson's and Dr. Fitch's cases, the amputation was complete. In all of these cases, the part of the limb amputated or nearly so, was found to be in a full state of development, plump and undecomposed. An interesting fact arises here, viz., that which relates to the nourishment of the part, after the integuments and vascular connections of the muscular parts have been cut off down to the bone. Here, evidently, the nourishment of the part nearly amputated must be carried on by, at first, the small capillary arteries of the periosteum and the arteries of the medullary cavity; and after the process has advanced so far as to obstruct the capillary arteries of the periosteum, then by those of the medullary cavity alone. Thus it is that we see the limb retain its plumpness and integrity up to the very moment even of its amputation. The preservation of the parts in utero, for weeks after amputation, must depend upon the same causes that preserve, in many cases, the fœtus in this cavity for months after its death has taken place.

But it is not alone by the umbilical cord that spontaneous amputation in utero is effected. For Dr. Montgomery, previous to 1835, was of the opinion that it was mainly, if not entirely, due to cords or threads of organized lymph effused by inflammatory action, and constituting the parts at the point amputated. All the cases cited by him in his first essays, were instances of amputation effected through this variety of ligature. And the whole argument of Dr., now Prof. Simpson,

in his paper* is directed to the establishment and explanation of this point. In Dr. Montgomery's last paper he states that "while committing these observations to writing, to be read at an evening meeting of the College of Physicians on the 8th of August, 1835, he received an interesting specimen from Dr. Adams, in which the coiling of the umbilical cord round the left leg of the fœtus at three months, had deeply indented it." He also cites one more instance of the same effect produced just above the knee, which occurred in his own practice. These, together with a case cited by him from Morgagni,† are all the cases which he refers to as illustrating the process of spontaneous amputation by the funis umbilicalis. In speaking of Dr. Simpson's paper, he says, "I am happy to find that he, also, assents to, and indeed strongly confirms my view, both as to the agent which produces the change, and its consisting of organized lymph, such as is usually elaborated under the influence of inflammatory action, from which it is well known that several varieties of fœtal deformities arise;‡ and it is a matter of every day observation, how completely lymph, so effused, will be converted into distinct, firm threads, uniting opposite serous surfaces, especially those which move freely on each other, as the pleuræ and the peritoneal coverings of the abdominal viscera." Thus we see that there can be but little doubt that the efficient cause of spontaneous amputation is believed by Drs. Montgomery and Simpson, to be cords or threads formed out of "organized lymph, such as is usually elaborated under the influence of inflammatory action."

Dr. Wm. C. Roberts of this city, has detailed the leading facts of various writers on this subject, and has done much to call the attention of the profession of this country to this

* *Cases illustrative of the Spontaneous Amputation of the Limbs of the Fœtus in Utero, with Remarks.* By JAMES Y. SIMPSON, M. D., &c.—*Dublin Medical Journal of Science*, Vol. X. p. 220; 1836.

† *The Seats and Causes of Diseases.* Epist. xlviii. Art. 53, Vol. II. p. 747, of Alexander's Translation.

‡ See Geoffrey St. Hilaire's Investigations, in his work on "*Monstrosités Humaines*;" Meekel's *Handbuch der Pathologischen Anatomie*, Bd. ii. s. 138; and a paper on the Diseases of the Placenta, by Dr. Simpson, in the *Edin. Med. and Surg. Jour.*, Vol. XLV. p. 305, et seq.

curious and interesting phenomenon. To his elaborate paper* the reader is referred for much that is valuable on intra-uterine pathology.

From all we have read and seen on the subject, we venture the opinion, that ties or turns of the umbilical cord will be found to have more to do with spontaneous amputation in utero, than all other varieties of causes put together; and if we are not greatly mistaken in the matter, time will disclose the fact, that many of the deformities of the fœtus are the direct result of changes produced through its instrumentality. But our space will not allow us to follow this interesting subject farther on the present occasion; we will, therefore, close by subjoining the following conclusions, which may be said to embrace our knowledge of this subject to the present time.

1st. Intra-uterine or spontaneous amputation is of more frequent occurrence than systematic treatises on obstetric medicine and pathology would lead us to infer.

2d. It is the direct result of physical causes, which produce their effects by arrest of development commencing at an early period of intra-uterine life, rather than by absorption from pressure near to the term of utero-gestation.

3d. It is directly effected, 1st, through the agency of the funis umbilicalis of the child being coiled,* tied, or looped around the part at the point amputated, which is most frequent; 2d, through the agency of bands, cord, or threads of "organized lymph effused by inflammatory action, constricting the part at the point amputated," which is less frequent.

4th. That the normal development of a part, beyond the point constricted, is but rarely arrested; and that usually, and in most cases, it is effected as readily as if no constriction existed.

5th. That the limbs of the fœtus are the parts most frequently liable to the accident, but that the body, and even the neck, are not altogether exempt from liability.

6th. That the death of the fœtus in utero may result from this cause, and abortion follow as a consequence; and

* *On Diseases of the Fœtus; a contribution towards a better acquaintance with Intra-uterine Pathology.* By WM. C. ROBERTS, M. D.—*American Journal of the Medical Sciences*, Vol. XXVI. p. 369; 1839.

7th. That the diagnosis of this accident is not even problematical in the present state of our knowledge, and that therefore it cannot, at present, be the subject of preventive measures.

ART. III.—*Medical Notes and Observations.* By an Ex-HOUSE SURGEON, No. 2.

On Sloughing and Regeneration of the Scrotum: and on the Process of Cicatrization.

CLOSELY connected with syphilis and its consequences, on which we dwelt at some length in our last communication, is gangrene of the scrotum, which sometimes succeeds a sloughing chancre on the penis, that has been improperly or inefficiently treated, but also occurs from various other causes, and so frequently in hospital practice, as to render its history and appropriate treatment of the greatest moment to the surgeon. It most commonly results from rupture of the urethra, at its membranous portion, and consequent infiltration of urine into the cellular tissue of the perineum and scrotum; all this being generally one of the remote sequelæ of gonorrhœa; also from erysipelas, which, when it attacks this part, not unfrequently produces extensive sloughing, from the escape of an injection into its cellular tissue, which was intended for the cavity of the tunica vaginalis, in the radical cure of hydrocele: from the debilitating effects of long-continued fevers, as the typhus; from the effects of intense cold; and from the extension of common inflammation, from a wound of the penis, and perhaps from other causes.*

The first three causes, syphilis, gonorrhœa, and erysipelas, furnish by far the most cases of gangrene of the scrotum; but it is not uncommon to meet with it during the latter stages of typhus, while cases resulting from the three remaining causes must be rare, though I have seen instances of all which have been mentioned, except that caused by frostbite, of which one

* Pott, in his surgical works, Vol. II., p. 239, mentions three cases, in which sloughing of the whole scrotum resulted from extensive incisions made for the relief of distention, caused by anasarca of the part.

instance is recorded by Sir Astley Cooper, and one by Mr. Curling, in his *Treatise on the Testis*. The injection which caused the sloughing in the case above alluded to was a solution of sulphate of zinc, 3 i. Oj.; but a small quantity of which escaped into the cellular tissue; the sloughing was, however, extensive and deep, destroying nearly half the scrotum, and denuding the testicles. The constitutional irritation in this case was comparatively inconsiderable, and a radical cure of the hydrocele was effected. The case resulting from the extension of inflammation from a wound of the penis, was a very lamentable one, the wound being intentional, and for the purpose of removing a congenital phymosis. The man died.

Sloughing of the scrotum, from the infiltration of urine, and from erysipelas, can very frequently be prevented, by active and prompt surgical interference; this alone will avert the danger, when it is seriously threatened. Yet this relief, we are inclined to think, is seldom afforded to the full extent, except in hospital practice. The incisions require to be so extensive and so deep, that few physicians in private practice will venture to take the responsibility of making them, or of making them sufficiently early; to be effective, they must be made at once. There is not the slightest danger in making incisions in the swollen scrotum, of any extent, and to any depth, if the patient's power is not too much reduced; * they may be carried between the testicles to the urethra itself, and may even lay bare the testicles, on either side, if the tension of the part requires it; there is no large vessel to be injured, and no difficulty in suppressing the hemorrhage, if it be too abundant; pressure with lint stuffed into the cuts, generally sufficing, perhaps with the ligature of one or two small arteries in the cutaneous tissue.

Gangrene will, however, sometimes supervene, in spite of

* This may seem to conflict with the caution inculcated by Mr. Pott, with regard to the danger of making incisions in the scrotum, distended by common anasarca; in this case, punctures answer every purpose, as depletion is not needed, and the serum will drain as well from punctures as incisions. But in erysipelas and infiltration, the danger of sloughing is imminent, and punctures would only aggravate the difficulty, by increasing the irritation.

the best treatment, and then its management, and that of the subsequent devastation of tissue, becomes the important point. Sloughing of the entire scrotum, though a serious calamity, is, provided it be properly treated, by no means so dangerous to life, according to our experience, as is generally supposed, except when occurring from the extension of sloughing phagedena.

In this case, the system is so prostrated, by the poisonous nature of the disease, that a fatal result may generally be anticipated. Fortunate it is that sloughing of the scrotum from this cause is rare, if the treatment has been at all appropriate to the nature of the chancre. The treatment of gangrene of the scrotum is fortunately very plain, only it must be prompt and vigorous. As soon as the sloughing has become general, the powers of life begin to give way rapidly, and a disagreeable train of nervous symptoms set in. The indications, of course, are to quiet the nervous system by anodynes and antispasmodics, as opium and camphor, and to support the strength by stimulants, tonics, and full nourishing diet, as far as the stomach will bear it. These remedies require to be commenced early and given freely. But it is to the after consequences of the disease that we wish particularly to call attention. When the sloughs have all cleared away, we not unfrequently find the entire scrotum gone, except, perhaps, now and then, a small fragment at either side, and the testicles hanging pendulous by their cords, and entirely denuded; perhaps the tunica vaginalis also either wholly or partially destroyed. This condition presents an alarming picture to a practitioner who has not had the fortune to have met with a previous case, to direct him in his treatment. What is to be done? I will state what a practitioner of eminence in his section, a man of acknowledged ability, and president of a State Medical Society, actually did in such a case. Not finding any directions in the books touching the point, and not supposing it possible that such an extensive devastation of tissue could ever be replaced, by the powers of art or nature, *he removed both testicles.* Of this I was informed by a physician from a different section of the State; who told me that he had himself, about the same time, a similar case, and was equally at fault to know

how to manage it, as he could find no precedent in his books, and naturally supposed that the case was one of great rarity. However, he concluded to let nature alone, and watch her operations. He merely supported the parts by a suspensory bandage of oiled silk, covering them with cloths saturated with cream. He was much delighted, in course of time, to find a perfect cicatrix, and new scrotum formed, and the parts decently covered. These two cases, and a knowledge of the fact, that notice is taken of this serious and troublesome complication of disease in but few of the works on surgery, and no practical directions for its management given, have induced me to give it a somewhat extended notice, at the risk of being considered tedious, by those readers who may happen to be better acquainted with its history than the mass of practising physicians.

Curling, in his work on the testis, gives the most full account of sloughing of the scrotum and its consequences. Acton devotes three lines to it, in his complete treatise on venereal diseases; and Pott casually mentions, that regeneration of the scrotum took place in one of the cases which he introduces in his "Treatise on the Hydrocele," to illustrate the danger of incisions into the scrotum, for œdema of that organ.

The *local* treatment of the affection is simple. An antiseptic and stimulating or anodyne cataplasm, according to the condition of the parts, and a suspensory bandage, giving them moderate support until the sloughs separate; afterward, the application of a stimulating ointment or lotion, with the suspensory bandage. It is wonderful and beautiful to see the rapidity with which the process of cicatrization proceeds, when it has once fairly commenced.

While on the subject of *cicatrization*, and the reparative power of the system, it may not be amiss to notice a few cases, in which nature, thwarted by their obstinacy, resorts to extraordinary efforts, at variance with her usual course, rather than be foiled. It is a very general opinion among physicians, and I have been repeatedly assured by surgeons who have had hundreds of ulcers under their treatment, that *they can only heal from the circumference*,—that new skin, as the cicatrix is

often incorrectly called, can only be reproduced by the old.* But I have the evidences of my own senses to oppose to this general belief. For I have seen, in the course of my hospital service, a number of unquestionable cases, in which the process of healing proceeded as well from the centre as the circumference, and I have repeatedly called others to witness the same fact. It is remarkable that this unusual occurrence has taken place only in very indolent ulcers, or in ulcers where it seemed almost impossible that a cicatrix could be produced without this unusual aid. I will briefly allude to some of these cases, without going into formal details. The first which attracted my attention, and that of the other surgical attendants, was an *excavated, secondary ulcer*, on the dorsal aspect of the fore-arm, as large as a Mexican dollar, in a patient occupying ward 15 (the present ward 9) of the main building of the New-York Hospital. This ulcer had, for weeks, resisted a variety of treatment, both constitutional and local; when, at a time that we were beginning to despair of being able to do any thing with it, cicatrization commenced simultaneously at the centre and circumference, and proceeded without interruption; the cicatrix from the centre finally meeting that from the circumference. This was in 1848. In the same ward was another patient, with a *venereal ulcer* in the groin, of the *herpetic* character,—the most difficult of all to heal, especially when occurring in this situation. With this the patient had been confined to bed for weeks, and had exhausted every imaginable application, as well as the patience of his medical attendants, when the sore finally commenced cicatrizing, and the healing proceeded from both the surface and the circumference of the ulcer. The *third* case occurred in ward 9 of the marine department;—an ulcer six inches in length by three or four in breadth, situated on the upper and outer aspect of the thigh, the result of an extensive burn, and surrounded

* "But do ulcers and wounds never heal from their centre? This is a topic concerning which pathologists have expressed different sentiments—some maintaining the affirmative, others the negative side of the question. From an inspection of numerous cases, I am convinced that the process of cicatrization takes place in one way only, namely, in that which I have described (from the circumference)."—*Gross's Pathol. Anat.*

by a dense cicatrix, the consequence of the healing which had already taken place, but which seemed to be now entirely arrested from the utter inability of the surrounding parts to contract further. Various and persevering attempts were made to heal the remaining sore for two months or more, by strapping, bandaging, confining the limb to the inclined plane, stimulants, caustics, &c., &c., without effect,—when, all at once, under the application of some mildly-stimulating lotion, it commenced cicatrizing gradually, as well from one or two points of its surface remote from the circumference, as from the latter itself; and, in a few weeks, if we remember aright, it had entirely healed. In this case, the patient himself first drew attention to the fact, that “new skin,” as he called it, was forming at the centre of the ulcer.

A *fourth* case occurred in No. 12, main building (now No. 5) in an ulcer, resulting from an extensive venereal bubo in the groin. A *fifth* in No. 7 (now No. 3), and a very remarkable one. A patient, named Healy, was operated upon by Dr. Post of the hospital, for necrosis of the tibia; a large portion of the bone was removed by the chisel and saw. The case was doing well, when, under the influence of an epidemic gangrene, which was at the time scattering destruction among the surgical wards, the whole integument of the anterior and a portion of the lateral surfaces of the leg, with all the cicatrix that had formed, sloughed, and was cast off, leaving behind an immense unhealthy ulcer, which seemed but little disposed to heal; and when cicatrization had been partially established, the sloughing process again swept away all that had been gained; this was repeated, to some extent, a third time. When the patient had been in the hospital near a year, he had still a large ulcer over the tibia, where the bone had been removed, and this was surrounded by a dense, shining cicatrix. Finally, it was noticed that it was healing from one or two points of its surface, quite distant from its edges, and, after a time, the whole surface was covered by a cicatrix, which, I believe, subsequently gave way again to a trifling extent. A *sixth* and equally remarkable instance occurred in the case of Slater, in No. 8 of the marine building, who lost the whole of the penis, the scrotum, and a portion of the pubes, from a

sloughing chancre. The patient survived the prostrating effects of the terrible disease, the sloughs separated, and an immense gaping ulcer was left, with the stump of the penis in its centre, and the pendent testes. Cicatrization, after going on for some time at the edges, seemed to be arrested when the testicles were nearly covered. It then commenced at the stump of the penis, in the neighborhood of the orifice of the urethra, and, spreading outward, met the cicatrix from the circumference.*

The *seventh* case was in No. 10, marine building. A patient, named Whalen, had a very indolent chancre of large size on the dorsum of the penis, that had resisted various treatment, both local and constitutional, when, under the application of dilute nitric acid lotion, it commenced healing both from the centre and circumference, and, in a few days, cicatrization was complete.

Now, in none of the above cases, except the *sixth*, was it possible to have been deceived; for, from their very nature, it was impossible that any vestige of integument could have been left on the surface of the ulcer, to serve as the foundation for the subsequent cicatrization which formed there. The idea that this process can only take place from the circumference, arises from the fact that such is usually the course of ulcers, and from a mistaken opinion regarding the nature of the healing process, and of cicatrices. The fact is that skin is never regenerated; when once destroyed, it is gone for ever; and we were wrong in applying the term regeneration to the reparation which ensues after destruction of the scrotum. It is not regeneration of the scrotum, but a substitution for it. The dense, inelastic glistening substance, of which a cicatrix is composed, has as little resemblance, whether examined superficially, or by the microscope, to true skin, as has the latter to tendinous or ligamentous tissue. Skin may, however, be said to be regenerated in one way; for, when a wound involving an extensive destruction of integument has healed, the cicatrix is, perhaps, not

* It is possible that, in this case, it may have commenced at the orifice of the urethra, the living membrane having, perhaps, first assumed the character of integument, as is sometimes the case with mucous membrane.

one-third the size of the original wound, and the remainder is true skin ; but this skin has not been re-produced ; it has only been drawn by the contraction of the granulations of the ulcer from the surrounding parts. Therefore, we always find that the more loose the integument and cellular tissue surrounding an ulcer, the smaller, *cæteris paribus*, will be the cicatrix, and *vice versa*. But little is known of the nature of the *cicatrix*. Boyer says, in his Surgery, after describing the approximation of the edges of the sound integument during the healing process :—"But still, a small extent remains, on which the skin does not advance, and in this part alone a true cicatrix is formed. All that we know of the mechanism of this process is, that the granulations which form that part of the bottom of the wound, over which the skin cannot extend, becomes covered with a membranous pellicle, which connects them together, dries, becomes organized, and takes the place of the natural integuments. Analogy would lead us to believe, that the pellicle is formed by the albumen, which also connects inflamed parts together." (Boyer's Surgery, vol. 1, p. 354.)

The fact that the cicatrization or closing of the sore is accomplished mainly by the approximation of its edges, indicates very clearly the appropriate treatment, where the circumstances of the particular case do not forbid it ; viz., the artificial approximation of the edges by strapping. It was with this view that Baynton recommended the practice which has produced such a revolution in the treatment of obstinate and long-standing ulcers ; though it is, we think, questionable, whether in these its efficacy is not rather due to the mechanical support afforded to the part, than to the approximation of the edges, which must be inconsiderable in consequence of the callous condition of the surrounding tissues. But there can be no reason why this treatment should be confined to chronic, indolent ulcers.

FREDERICK D. LENTE, M. D.,
Surgeon to West Point Foundry.

ART. IV.—*Penetrating wound of the Posterior Tibial Artery, followed by Traumatic Aneurism.—Ligature of the Artery at the Point of Injury.—Secondary Hemorrhage.—Amputation.* By J. H. BROWN, M. D. Paris, Me.

J. W. D., of Paris, Oxford county, Me., aged 35, nervous temperament, on the 12th June, 1851, received a penetrating wound in the left leg, about six inches below the knee-joint. The wound was produced by a sheep shears, one side of which was thrust violently into the calf of the leg by the kick of a sheep, while in the act of shearing. The direction of the wound was forward and downward, and slightly outward. The wound was not directly on the posterior side of the leg, but a little towards the mesiam line. Externally, it was about an inch in length, proving that the side of the shears must have entered the leg between one and a half and two inches.

On being called upon to prescribe for the wound about four hours after the accident, it was found as above described, without any external hemorrhage. A large, hard tumor had formed in the calf of the leg, distending it to the utmost in all directions, laterally, posteriorly; and extending between three and four inches above and as many below the external wound. On careful examination, the tumor was found to pulsate in correspondence with the action of the heart. The patient remarked, that on the receipt of the injury, "there was a rush of blood;" but that the bleeding externally did not continue more than from three to five minutes. The external wound then closed, and the tumor immediately formed. From the depth of the wound, its direction, and the consequent formation of a pulsating tumor, I supposed the posterior tibial artery had been wounded, causing a traumatic aneurism. The pain was severe in the region of the tumor, and the pulsation strong and distinct. As an aneurism had already formed, no treatment could be adopted to prevent such a result. For the time being a roller was applied to the limb, with a compress wet in tinc. opii over the tumor. The next day several surgeons were consulted in relation to the treatment that should be adopted.

The conclusion of a majority of those consulted was, that a treatment similar to that employed in many cases of true aneurism at the present day, should be first tried. This treatment was to consist of compression of the femoral artery at one or more points, by an instrument that would press upon the artery and the opposite side of the thigh, to such an extent as to cause the coagulation of the blood in the tumor, in the same manner and for the same purposes as recommended by Dr. Bellingham in Braithwaite, Part 15, pp. 187-8. The compression was to be so made as to leave all other parts of the thigh free except the points compressed. An apparatus was fitted up, which fulfilled these indications. It consisted of a tourniquet, armed with two semicircular pieces of wood, over which the strap of the tourniquet passed, and by the use of compresses was capable of controlling the circulation through the artery, with as much facility and safety to the limb as any apparatus for such a purpose.

Compression was commenced on the third day of the accident, and employed to such an extent as to prevent the pulsation in the tumor to the touch, though the passage of blood was not entirely suspended. It was continued during six or seven days. During this time, there was considerable swelling, some pain, and occasionally severe cramp in the leg. At the end of this time, the pulsation in the tumor was essentially diminished, and, to detect any, required very careful examination. The apparatus for compression was removed for several days, during which time the swelling, to a great extent, disappeared, but the cramp and pain continued, and the pulsation in the tumor increased. The pain was relieved by the use of opiates. While the compression was employed, and afterwards, a roller was closely applied to the leg, from the toes to the upper part of the thigh, and wet in a strong decoction of the papaver somniferum, surrounded by warm flannels.

At the end of three or four days, the cramp and pulsation continuing, it was deemed advisable to resort again to compression. The use of it thus far had had the effect of greatly diminishing the pulsation in the tumor. A farther employment of it, it was supposed, would complete the coagulation of the

blood in the tumor, and effect a cure. The leg and thigh being closely bandaged, the apparatus for compression was again applied in the same manner, and to nearly the same extent as before, and continued for twelve or fourteen days. After this time, it was continued during three or four days, but to a much less degree. From careful examination, I now concluded the pulsation in the tumor had ceased, and removed the compression. The cramp was severe soon after applying the apparatus, but grew less in a few days, and nearly ceased before it was removed. It was no severer at any time than when compression was not used. There was considerable tumefaction, and more or less pain during this time, which gradually subsided.

A consultation of surgeons, consisting of Drs. Kittredge, Millett, and Danforth, was called to decide on the future treatment of the case. Nearly five weeks had now elapsed since the injury. The pulsation in the tumor since compression had been abandoned, had increased and become quite distinct. It was quite certain the blood had not fully coagulated in the tumor, though the pulsation was greatly diminished. The question to be decided was, whether further reliance was to be placed on compression, or a ligature applied to the artery, at some point. The majority were of opinion that an operation was not required, and that the former course should be pursued. I supposed that compression had accomplished all it could, and that an operation was necessary; and did not, therefore, the four following weeks, prescribe much for the patient.

During these four weeks, but little was done for the case, except the application of poultices and fomentations to the tumor and leg, with a view to ulceration of the sac containing the extravasated blood. About a week before this time expired, an incision was made with a lance, through the skin and cellular tissue, on the front part of the leg, between the edge of the tibia and the tumor, there being at that point some signs of fluctuation. It was followed by no discharge whatever, except a little dark grumous blood, which oozed from the incision. A probe could be passed behind the tumor, through to the opposite side of the leg. At the expiration of these four

weeks, and one week after this incision, the following were the patient's symptoms:—Considerable pain in the leg; the tumor large, hard, and distinctly pulsating—the skin over it being of a purplish color, and very dark about the incision; the foot numb, inclined to be cold; the skin shiny and œdematous. He had but little appetite, was much exhausted, and very much emaciated and weak. He had anticipated a cure by compression, but had not realized his expectations; and with a feeling of discouragement, he thought a cure was even more distant than at the commencement. Dangerous and uncertain as I deemed an operation, at this late period in the case, I recommended it as the only possible course for the safety of the limb. I deemed an operation at the point of injury the best under the circumstances. The tumor obstructed an operation at the upper part of the leg; and if a ligature were passed under the femoral artery, and tied, owing to the immense tumor in the calf of the leg, and its long standing, it would certainly be followed by mortification. It was farther considered, that if the posterior tibial artery were secured at the point of injury, and was followed by secondary hemorrhage, the thigh would be in a healthy condition for amputation. Having the best authority for a resort to this treatment, and the concurrence of one physician beside myself, I obtained the consent of the patient to an operation. He was told that the operation would be painful, tedious, and difficult; that he might not survive it; that mortification and secondary bleeding might follow, and amputation be rendered necessary. He answered by saying, "I shall die as I am; I can do no more if operated upon."

Assisted by W. A. Rust, M. D. of Paris, the operation of applying a ligature to the posterior tibial artery, at the point of injury, through the aneurismal sac was attempted, and with considerable difficulty performed. An incision was made, three inches in length, on the posterior and most prominent part of the tumor, a little to the outside of the original puncture, in the direction of the posterior tibial artery, through the fleshy parts of the *gastrocnemius* and *soleus* muscles. On arriving at the clotted blood, a portion of it was removed, and the tourniquet which had been applied to the thigh was loosened, so as to ascertain

whether any bleeding would take place. As soon as this was done, there was a flow of red blood welling up from the bottom of the sac, through the clots, and beneath the point where the scalpel had penetrated. This convinced us that there was *active hemorrhage from an artery*, that must be secured. I enlarged the incision to six inches or more; removed the clots, amounting to at least a pint and a half; cleansed out the sac with a sponge, and again loosened the tourniquet, to ascertain the precise point from which the hemorrhage proceeded. The patient fainted, but soon rallied by the use of stimulants. I again cleansed out the sac, and not being satisfied where the precise point of bleeding was, I placed my finger upon the supposed locality of the posterior tibial artery, above the supposed puncture, and again removed the tourniquet. I felt the artery pulsate, and saw the place from which the blood proceeded, welling up from a point just below my finger. The sac was filled with blood before the tourniquet could be tightened, and the patient again fainted. After cleansing out the sac again I proceeded to search for the artery. There was no guide—no pulsation—the surface of the sac being very dark, and the cellular tissue behind the fascia, which incloses the deep-seated muscles, blood-vessels and nerve, being indurated and discolored. The search, therefore, was rendered tedious and difficult. Judging of the usual locality of the posterior tibial artery at this point, the fascia and arterial sheath was opened, and the artery at last found imbedded in a mass of indurated cellular tissue. The artery was secured by ligature, the tourniquet removed, and there was no more hemorrhage. The sac was now cleansed, and, after waiting a short time, to ascertain whether a returning hemorrhage would occur; none following, the edges of the sac were brought together, confined by adhesive straps and a roller, and the patient was laid in bed. He was much exhausted, but in the course of twelve hours, reaction took place, and he was doing well.

It should be here stated, in passing, that the contents of the tumor consisted of clotted blood. Some of them were very dark colored and partially broken down and decomposed. Near the bottom and central part of the sac the clots were firm and partially organized. On washing them, these latter

were of a white fibrinous color and consistence. The only exception to the statement, that the whole contents were clotted, was the fact, that for a space as large as a hen's egg, and of similar shape, at the point supposed to have been originally punctured, the blood was not clotted. Around this oval space the clot was concave, hard, smooth, and resembled a stone hollowed out by the action of water.

The operation was not followed by great constitutional irritation. On the third day healthy pus was discharged from the sac. During the ten days subsequent to the operation the patient appeared to be doing very well. The swelling had mostly left the ankle and foot—the skin was of a natural color and temperature—the numbness had disappeared; and the wound was discharging a healthy pus, which diminished in quantity daily. Both patient and physicians now supposed the darkest period had passed, and that a speedy recovery was quite certain.

At the end of this time, however, on the eleventh day subsequent to the operation, a great change had taken place. The leg had become suddenly swollen, pressed, hot and painful. Arriving on the morning of August 26th, I learned what had taken place, and the patient remarked that "his leg was bursting open." On removing the roller and giving freedom to the parts, the source of difficulty became fully known in all its frightful features. The event so much dreaded, and so alarming, had actually occurred—that of *secondary hemorrhage*. Immediately on removing the roller, the cavity of the leg, formerly occupied by the clotted blood, became filled up and pressed out on all sides; and fresh arterial blood commenced pouring a powerful, steady current through the opening left in the incision for the discharge of pus; and likewise through the incision between the tibia and tumor made a week prior to the operation. Time was now precious. The thumb was placed upon the femoral artery, and a tourniquet immediately applied to the thigh. A consultation of surgeons, consisting of Drs. Kittredge, Millett and Howe, was called with all possible dispatch. When they had assembled there was only one opinion as to the course to be pursued. Amputation of the leg above the knee-joint was decided upon as the safest

and most judicious method of treatment. Preparation was accordingly made, and the leg amputated forthwith. The patient endured the operation with the greatest fortitude; and although the chances for recovery, at the time, were not considered greater than as one to four by any of the surgeons, yet he seized upon even this faint hope with the greatest avidity; and thought it much better than none.

The post-mortem examination of the leg proved that the posterior tibial artery had been wounded; and that a ligature had been applied to it, above the puncture. Where the ligature was applied, the artery was completely separated for the space of half an inch. The divided ends of the artery were open and empty—its coats thin and smooth. To make sure that there was no mistake about the character of the blood-vessel that had been secured, I cut down upon the popliteus muscle, found the posterior tibial artery, and introduced into it a probe, which passed out of the open end of the artery where the ligature had been placed. This upper portion of the artery was apparently healthy—its inner surface smooth—of a light straw-color, and about two lines in diameter. The part below where the ligature was applied, for the distance of an inch and a half, was not more than half the diameter of the part above—its coats very much thickened—its inner surface rough and studded with a great number of small light-colored eminences, of cartilaginous hardness. At one point on the posterior side of the artery, about a quarter of an inch below its open end, there was an eschar which projected inwardly, about a line and an half in diameter; and all the coats were much thicker at this point. The little eminences clustered thick about this point on the inner surface of the artery, while externally the outer coat was much thickened and attached to the cellular tissue. The coats had the appearance of having been punctured by a pointed instrument, subsequent to which it had closed over. The direction of the wound could be traced with great accuracy through the muscles to the punctured point in the artery. The clot was bounded anteriorly by the deep-seated fascia which surrounds the blood-vessels, nerve and deep-seated flexors—laterally by cellular tissue, and posteriorly by the soleus muscle. The sac was between seven and eight inches in length.

The patient suffered much after amputation from spasm of the muscles about the thigh, as is usual in such cases ; but the parts healed with great promptness, and in less than six weeks the patient was able to leave his bed, walk about with the aid of crutches, and ride several miles from his residence.

ART. V.—*Memoir on Nicotine, by M. ORFILA. Translated from the French, by CHARLES A. LEE, M. D., with notes.*

[Concluded from page 243]

Examination of seven pieces of plank, which had been sawed and removed from the floor of the dining-room of the Chateau of Bocardmé, at Bury ; for although they had been subjected to repeated washings, they, nevertheless, still apparently bore marks of blood.

FOUR of these planks had been washed ; there were noticed on them scratches, or marks, which appeared to result from rubbing violently some hard body upon the wood ; there were also observed numerous irregular spots, some brown, others of a reddish-brown, and others still of deep red color. The plank marked No. 2, presented especially spots more strongly characterized than the others. The upper surface of the planks, Nos. 1, 2, and 4, was planed, in order to detach shavings. Plank No. 3 was left entire. The very fine shavings obtained from the other planks were left to macerate in cold water, each in a separate vessel. The liquid contained in each of these vessels was colored uniformly of a pale brownish yellow ; each was very distinctly alkaline, when tested with turnsal : each had the decided acid taste of tobacco ; each was acidulated with oxalic acid and filtered—each liquid was then exposed to a dry vacuum to reduce it to three quarts—a small portion of the residue of the evaporation of each of these was introduced into three small experiment flasks, and mixed, each with its own volume of a solution of caustic potash, and agitated with ether.

The ether, decanted after sufficient repose, and left to spontaneous evaporation, furnished slight, oily, colorless striæ, of a very pungent odor, and of a burning acid taste, which extended into the mouth and fauces ; this oily matter was alkaline to turnsal. It disengaged at the ordinary temperature, colorless vapors, which, by contact of a stopple, impregnated with hydrochloric acid, produced white fumes—water dissolved it immediately, and the solution was colorless and alkaline ; it was saturated with hydrochloric acid, and increased

afterwards by a drop of a solution of bichloride of platinum; the mixture, left to itself, furnished by slight evaporation yellowish, quadrilateral rhomboid prisms, insoluble in alcohol and ether.

These facts left no doubt of the presence, in each of the pieces of plank, of *the same alkaloid* as that found in the organs of Gustavus Fougnyes.

Planks 5, 6 and 9.—No. 7 presented an irregular cavity, resembling a knot of wood, and filled with a thick fluid; its surface was black, and it stained the fingers and paper like oil. This matter, with a portion of wood, was removed by a gouge; the whole was placed in a small globular vessel, with water, acidulated with oxalic acid; and digested at a temperature of 30 to 40 degrees (centigrade). The liquid was then decanted, and the matter washed with distilled water; the washings were evaporated with a gentle heat, and united with the first liquids.

Ammonia was then added, and the mixture was afterwards agitated with ether; this, after suitable rest, was decanted and left to spontaneous evaporation; it left an oily coat of considerable amount, of a colorless liquid matter, of a sharp, disagreeable, and aromatic odor, and a burning acrid taste, which was experienced in the mouth for a long time; this matter was alkaline to turnsal. It was taken up by ether, and the solution was preserved for future use.

The substance removed by the gouge, which had been exhausted with water acidulated with oxalic acid, was dried with care, and hastily treated with ether; the liquid was colored, of a slightly greenish yellow; left to spontaneous evaporation, it left a very notable quantity of a thick, liquid matter, of a light greenish-yellow color, and having the odor of rape oil. This matter was placed in contact with nitric acid of the sp. gr. 1.100; at the end of 48 hours, it was changed into white clots (*grumeaux*). It follows, then, from this examination, that the blackish matter confined in this close cavity, besides the alkaloid found on the planks, 1, 2 and 4, contained a certain amount of non-drying oil, which had the odor of the oil of rape-seed.

The upper surface of planks Nos. 5, 6 and 7, was planed. The chips procured were macerated with water in a separate vessel. The water of each vessel was colored of a brownish yellow, and acquired a very decided alkaline reaction; the taste of each liquid was sharp and pungent to the fauces. They were acidulated with oxalic acid, filtered, and subjected to evaporation in dry vacuo. One portion of

the residue of each of the liquids was introduced into a small flask, separately, and an equal volume of a solution of caustic potash added; the mixture was agitated with ether, which, after suitable rest, was decanted into a watch-glass, and left to spontaneous evaporation. There remained in each glass very abundant shining striæ, colorless, of a pungent, disagreeable odor, and a sharp burning, very persistent taste, turning blue the reddened paper of turnsal. This matter formed with water, in which it was dissolved, a colorless, transparent liquor, which was neutralized by hydrochloric acid: the solution, with the addition of bichloride of platinum, and left to itself in a warm place, deposited at the end of half an hour, quadrilateral rhomboid prisms of a golden-yellow color.

There is no doubt that the spots found on the planks 6 and 7, were due to the same alkaloid as was discovered in the organs of *Gustavus Fougues*.

The shavings from planks 1, 2, 4, 6 and 7, which had been exhausted of all soluble matter in water, acidulated with oxalic acid, were dried with care, and afterwards treated with pure ether. The ether, decanted and abandoned to spontaneous evaporation, furnished an abundant white product, semi-liquid, oily, which stained paper, and which reddened the blue paper of turnsal, slightly moistened. This product, treated by a quantity of alcohol, not sufficiently anhydrous, left a fatty solid mass, which, after being dissolved in boiling alcohol, gave, on cooling, small quite scales: fusible, and reddening the blue paper of turnsal.

No doubt these chips contained both liquid and solid fatty acids. The acid solutions obtained by treating the chips of planks 1, 2, 4, as well as those obtained by treating the chips of planks 6 and 7, were united, and caustic ammonia added; the mixture became brown; it was then agitated, after many exhaustions, with ether, to remove from it the last traces of the alkaloid. The ethereal solutions were reunited, and joined with those which had been obtained by treating with oxalic acid, with ammonia and ether, which had acted on the black matter contained in the knot before mentioned. This liquid was subjected to spontaneous evaporation, exposed to a current of hydrogen gas; there remained a yellowish liquid of a very pungent, disagreeable odor.

[It is unnecessary to describe at length all the processes employed, as they were similar to those described in the former part of this paper; *nicotine* was recognized distinctly in this, as in the former experiments. To sum up, plank No. 2, presented three spots, which

were caused by blood; 1, 2, 4, 6 and 7, contained *nicotine*; plank No. 7, presented a mark, formed by oil, apparently rape-oil; planks 1, 2, 4, 6 and 7, presented fatty acids and potash, one portion of which proceeded from the soap employed to wash them; another part was, perhaps, that found in the wood of the oak.]

Requisition of the 7th Dec. 1850.—Examination of an old pantaloen, of brown cloth, belonging to Francis Blicquy, a day-laborer, employed at the Chateau of Bury.

After subjecting it to a great number of experiments, which it is useless to describe, M. Stas concludes that the spots with which the pantaloen was covered, were produced, some by hydrochloric or sulphuric acid; others by an alkaline solution of potash or soda; others, as the brown, thick and somewhat gluey, by a substance containing nicotine; this substance exhibited the same reactions as the watery extract of tobacco.

Requisition of the 10th Dec. 1850.—Chemical analysis of animals, made for the purpose of discovering whether they died from indigestion, or the action of a poison.

Two cats and two dogs found inclosed in wooden boxes, in the garden of the Chateau of Bitremont, were examined; the boxes exhaled a very putrid odor; the animals were smeared all over with vegetable mould; they exhaled a disgusting odor. On opening the cats, the lungs were found to be black, very emphysematous, of a livid color, the stomach much distended with gas; this viscus contained a viscid, putrid fluid, consisting of decomposed flesh, the paw and tail of a mouse, etc; it was strongly alkaline; the jaw was disarticulated with the greatest ease; the buccal cavity was filled with a very viscid fluid, of a blackish green color; the end of the tongue was black; the epithelium was detached with the least effort; the whole pharynx was filled with a greenish fluid; the different organs changed to blue turnsal paper. In experimenting upon them, in the manner already described, M. Stas concludes that they contained an organic, volatile alkaloid, of a sharp suffocating odor, and of an equally pungent taste; but the reactions obtained, were insufficient to affirm that the alkaloid was nicotine.

*Requisition of the 7th Jan. 1851.—*Having for its object to determine whether it be possible to extract nicotine from the two kinds of tobacco, found (*Indig. and Exotic.*) after having devoted himself to the researches proper for extracting nicotine, M. Stas concludes in the affirmative.

Requisition of the 16th Jan. 1851.—Having for its object to make an analysis of the liver and lungs in their normal state. Subjected to the same experiments as were made to detect nicotine in the liver and lungs of Fougnyes, results which showed conclusively that these organs contained no nicotine.

Requisition of Feb. 27th, 1851.—Having for its object to make experiments on animals, in order to ascertain if the same phenomena would be observed, as were noticed in Fougnyes.

In order to attain the end in view, says M. Stas. I believed it necessary to make three experiments; the 1st, to destroy a dog with nicotine; the 2d, to kill another dog with an equal quantity of nicotine, but turning down his mouth, immediately after death, a certain quantity of acetic acid;* and lastly, 3d, to kill a dog by insufflation of air into the jugular vein. From the results furnished by these three experiments, we may deduce, 1st, the part which receives the nicotine by the organic alterations observed in the autopsy, made forty-eight hours after death; 2d, the effects due to the ingestion of the acetic acid after poisoning by nicotine; 3d, in fine, the effects which equally result from cadaveric imbibition.

1st Experiment.—A dog of moderate size, old, poor, and of feeble constitution. Two cubic centimetres of pure nicotine were turned upon its tongue, by means of a pipette. The poison had scarcely come in contact with the tongue, when it took on a violet odor; the animal was agitated and made efforts to reject the liquid ingested; it fell immediately on its right side; it took on tetanic convulsions; the vertebral column became stiff; the neck and head were bent towards the back; the anterior and posterior extremities were alternately extended, as was also the tail. Besides the extension, they moved as in the act of swimming, the pupils were dilated to such a degree, that the iris only presented a very narrow circle; the convulsions increased in force, the spinal column and the four limbs were extended; the tail bent, and the animal expired. At the same moment there flowed from the mouth a considerable quantity of a clear,ropy fluid, which was saliva. During these phenomena, the tongue hung from the mouth. Between the administration of the poison and its death, 30 seconds elapsed, and the last expiration had scarcely taken place, when complete relaxation of the muscular system of animal life succeeded.

2d Experiment.—A full-grown dog, of moderate size, and of strong

* M. Stas believed that Fougnyes died under these circumstances.

constitution; two cubic centimetres of pure nicotine were poured upon its tongue. The tongue assumed the violet hue, as observed in the last experiment. There was an escape of urine. The animal soon fell upon its *right* flank, and presented a series of convulsive movements of which I have spoken, with this difference, that their access was more violent and their duration more prolonged. Death followed in about *half a minute*. A flow of saliva did not follow, as in the former case, but *faeces* were expelled. Immediately after the last breath, 32 cubic centimetres of vinegar (taken from the house at Bitremont) were turned into its mouth. The liquid flowed into its stomach, and the tongue was discolored at the moment of contact.

3d Experiment.—A grown dog, of moderate size, and strong constitution. A certain quantity of air was introduced into the jugular vein. The animal made several groans. The respiration became difficult, and nearly arrested. The beatings of the heart, more and more irregular, became feeble, and were soon extinguished. These phenomena lasted about two minutes and a half, at the end of which time the animal expired.

Autopsy of the body of the first dog.

The body was placed in the position it had at the moment of death, that is to say on the right side. It was slightly meteorized, and gave forth a decided odor of putrefaction. The abdominal walls were green; the tongue was swollen, especially at its base, which presented a deep red hue, and covered with a glutinous matter; the floating portion was of a grayish, dull, livid color. The epithelium was detached with the greatest facility by keeping over it the handle of the scalpel. The red hue of the base of the tongue extended to the pharynx, and the esophagus and viscera of the abdominal cavity presented nothing in particular, unless it were a strong sanguineous imbibition, a phenomenon purely cadaveric. The fluids of the liver were without action when exposed to test-papers. The larynx and trachea were sound; the right lung was gorged with black blood. The left, equally gorged, presented a group of apoplectic spots. The right heart was obstructed by black grumous blood, of little consistence, and the same was true of that found in the left, though it was less abundant. The brain was somewhat softened; the spinal marrow exhibited a red discoloration of its membranes, with sanguineous exudation in the superior cervical region, from the third cervical vertebra to the occipital foramen; with the aid of a magnifier slight dots could be perceived.

Autopsy of the second dog.

Death produced by nicotine, followed by ingestion of acetic acid. Considerably swollen; a sanguinolent fluid flowed from the nostrils; putrid odor; persistent paleness and discoloration of buccal cavity; the tongue had a grayish, livid aspect, but not swollen; the floating portion appeared slightly hardened; at the right border of this portion of the tongue, there was a deep bruised depression, owing evidently to the pressure of a tooth. The epithelium was raised in strips with the greatest facility. The pharynx offered the same aspect as the buccal mucous membrane. The esophagus was normal.

Besides the hypostatic sanguineous congestion in the abdominal cavity, the stomach contained a liquid of the color of the lees of wine. There extended from the pylorus upon the nerves of the mucous membrane, red, crimson-colored striæ; the same discoloration, though less intense, extended to the duodenum; the liver gave a very decided acid reaction.

The lungs appeared more dense than in their normal state; the apoplectic layers, the quantity and quality of the blood contained in the cavities of the heart, did not differ from what was observed in the first dog.

The cerebral substance preserved its normal consistence; it was dotted, and the plexus choroides injected. The pathological lesions of the spinal cord presented this difference, that the sanguineous engorgement was a little greater, and extended from the third cervical vertebra to the rachidean bulb; it ceased, on a level with the sub-sphenoid sinus.

Autopsy of the third dog, killed by air.

With regard to swelling, putrefaction, green color of the abdominal walls, etc., the body held a medium between the two preceding. In the digestive apparatus, with the exception of phenomena purely cadaveric, the whole was in a normal state. The right lung was the seat of hypostatic congestion; the left presented a uniform orange appearance, and the same permeability which characterizes sound lungs in the dog. The right cavities of the heart were much distended, and they contained black foaming blood. The brain and spinal cord, at its upper part, as well as the envelopes of the nervous centres, were in a normal state; no pathological ariose nor cadaveric alterations were observed.

The autopsy of the bodies being completed, we then proceeded

to try the poisonous properties of the alkaloid, *extracted from the organs of Fougnyes*. M. Stas made three experiments: two upon sparrows, the other upon a pigeon.

1st Experiment. The tongue of a sparrow was touched by a narrow capillary tube, containing a small quantity of this alkaloid. In a few moments, the bird reclined its head, and exhibited tetanic convulsions, precisely like those which had been observed in the dogs destroyed by nicotine. It died at the end of two minutes forty-five seconds, falling on its right side.

2d Experiment. A very small drop, as small as could be taken up with a capillary tube, was applied to the tongue of another sparrow. It immediately dropped its head and experienced tetanic convulsions, like those observed in the dogs. It died at the end of thirty seconds, falling on its right side.

3d Experiment. A small drop was placed in contact with the tongue of a vigorous pigeon. One portion of the liquid was projected, from a sudden shake of the head. In the course of a few seconds it had tetanic convulsions, like those observed in the dogs. It died at the end of one minute five seconds, and fell, like the other animals, upon its right side. Immediately after the death of this pigeon, we proceeded to an anatomical examination of the brain, and cervical portion of the spinal marrow. The central portion of the encephalon was in a normal state. Opposite the third cervical vertebra, and on the anterior face of the cord, there was a bloody stria, which extended to the medulla oblongata. In order to establish a comparison between the alterations presented by these animals and those which had been observed on the body of Fougnyes, see the medico-legal report of the autopsy, p. 231.

Answers of M. Stas to questions addressed to him by the Judge of Instruction.

1st Quest. To instigate and prove, by the aid of chemical analysis of the cadaveric materials extracted from the body of Fougnyes, first, if he had swallowed any poisonous or morbid substance.

Ans. From the numerous and incontestable results furnished by the chemical analysis of the organs of Gustavus, I conclude that the deceased had swallowed some poisonous substance.

2d Quest. What was the nature of this poison?

Ans. The substances were, first, *nicotine*, an organic alkali existing in tobacco, and one of the most violent poisons known; second, acetic acid (vinegar)

3d *Quest.* Was it not sulphuric acid?

Ans. It was not.

4th *Quest.* What quantity had been swallowed?

Ans. It is impossible to say what quantity of nicotine and acetic acid had been taken; but I affirm, that the quantity of nicotine which I extracted from the organs of Fougny, was more than sufficient to kill the strongest man.

5th *Quest.* Was it not mixed with some other matters when given?

Ans. The severity of the lesions, observable in the organs of the deceased, cannot be explained, on the supposition that it was mixed with other liquids.

6th *Quest.* Was not the black color of the lower lip (the upper being of its natural color), of the tongue, and of the whole mucous membrane of the mouth, or fauces, owing to the passage of some acid, particularly the sulphuric?

Ans. The alterations observed in the organs of the deceased coincide with those noticed in animals poisoned by a large dose of nicotine; nevertheless, the presence of vinegar may have produced some modifications in the nature of those alterations. I will explain myself on each of these points.

The experiments made with a very minute quantity of nicotine, extracted from the stomach of Fougny, upon two sparrows and a pigeon, left no doubt regarding the presence in the organs of a poison of exceeding power; since it destroyed by simple contact, and in a short time. It was only necessary, then, to prove, that this poison was nicotine.

To arrive at this result, it is sufficient to compare, 1st, the physical and chemical properties of these two substances; 2d, the organic changes presented by the animals killed by nicotine, and those observed in the organs of Fougny. The table hereafter given, containing a comparison of the physical and chemical properties of these two substances, proves their complete and absolute identity in this respect. It remains, then, to show the similarity of the organic alterations produced by nicotine and the poison extracted from the body of Gustavus. The problem is complex; the organs of Fougny contained, besides nicotine, a certain quantity of vinegar, which, having other properties, I may say almost opposite to those of nicotine, might modify, to a certain extent, the tissues which had been subjected to the action of the first poison.

The chemical properties of nicotine, in fine, are those of a caustic

alkali, which softens the tissues in destroying them, while the properties of vinegar are those of a dilute acid, which tend to contract the tissues, softened by the cauterizing action of the alkalies. But, however this may be, in comparing the results of experiments made upon dogs, with the aid of nicotine, with those which have been given in the report of the autopsy of the body of Gustavus Fougnyes, keeping in view the modifications due to the presence of vinegar, I arrive at the conclusion, that the organic attractions are similar, including the lesions on the side of the tongue, the buccal cavity, the pharynx, the stomach and respiratory organs.

In conclusion, a careful examination of the report of the autopsy of Gustavus Fougnyes, as well as my own observation, and especially the profound alteration of the upper surface of the tongue, induce me to believe, that the swallowing of these two substances took place in the following order:—The nicotine was first given, and afterwards Gustavus was *laid upon his back*, with the head turned to the right side. Immediately after, tetanic convulsions supervened, and continued till his death, which followed very soon after the administration of the poison. During these convulsions, the tongue was taken between the teeth, which will explain the deep print of two teeth observed upon the upper surface and left side of this organ. The vinegar was administered when life was already extinguished, and when the poison had produced all its cauterizing effect on the parts with which it had come in contact.

7th Quest. Seven pieces of oak plank, detached from the floor of the dining-room of the Chateau of the Bocarmés, at Bury, although subjected to repeated washings, did they not appear, nevertheless, to bear the marks of blood?

Ans. The pieces of plank, above mentioned, appear to me to have been obtained from two different parts of the floor. The planks marked Nos. 1, 2, 3, and 4, seem to have belonged to one part of the floor; and those marked Nos. 5, 6, and 7, to another part. The planks 1, 2, 3, and 4, had been thoroughly *washed with soap and water*. The plank marked No. 2 presented undoubted signs of blood. The planks 1, 2, and 4, contained a very notable quantity of nicotine. The planks 5, 6, and 7, had not been particularly washed. The plank marked No. 7 contained, in a depression, caused by a knot of the wood, a certain quantity of fixed oil, which appeared to be rape oil. The planks marked 6 and 7 also contained nicotine. In fine, I affirm, that most of the spots observed on the planks Nos. 1, 2, 4, 6, and 7, are due to nicotine, which had been freely spilled on the floor.

I moreover affirm, that some of these spots are owing to blood which had fallen on them.

8th Quest. To investigate and show, if an old pantaloen of brown woollen stuff, belonging to Francis Blicquy, a day-laborer at Bury, bore marks, traces, burnings, or any signs that they were caused by an acid, a poisonous or chemical substance; to verify, in short, the nature of the above acids, substances, or chemical ingredients?

Ans. The pantaloen, above mentioned, which had been partially washed, presented incontestable marks of burning, produced by a mineral acid, sulphuric or hydrochloric; the others indicated the action of a caustic alkali, potash, or soda. In fine, the pantaloen bore marks, more or less thick, or expanded, due to a substance which gave the *odor of tobacco*, and which contained a notable quantity of nicotine. It is very probable, however, that the substance causing the marks, was the watery extract of tobacco. I should add, that I have not the least doubt, that Francis Blicquy handled the chemical agents (the acids and alkalies), when he wore the pantaloons.

9th Quest. To examine and ascertain if two cats and two dogs, or one of these animals, did not perish in consequence of swallowing poisonous substances, and what these substances were?

Ans. The great alterations which had taken place in these animals, did not allow an examination of the whole four. I only attempted to detect nicotine in one of the cats. The result of these researches is, that the body of this animal contained a very small quantity of a volatile alkaloid. The properties which I have been able to establish, from this minute quantity, are insufficient to enable me to prove that this alkaloid is identical with that which I extracted from the organs of Fougny; nevertheless, I am compelled to state, that the identity of these two matters appears to me probable. But, however it may be with regard to this identity, it is certain that this alkaloid had been given to the cat; because liquid and volatile alkaloids are never produced by putrefaction.

10th Quest. To examine and show if the poison found in the body of Fougny, may be obtained from the two kinds of tobacco left in the house of A. Wisebaut, the gamekeeper of Count Bocarmé?

Ans. These two specimens of tobacco contain a very notable quantity of nicotine; and they might both have served to furnish the poison discovered in the body of G. Fougny. It is, however, one of these samples (the exotic tobacco), that is usually employed by chemists for extracting nicotine.

11th Quest. To ascertain if the vinegar contained in a bottle found

at the Chateau of Bitremont, could produce one of the substances found in the body of Gustavus Fougnyes?

Ans. The vinegar above mentioned, might evidently have furnished the acetic acid found in the organs of Fougnyes, but it could not have furnished the nicotine, because it does not contain it. From experiments made with nicotine, it appears that vinegar changes the appearance of the tongue, which has been subjected to the caustic action of nicotine; under its influence this organ acquires, at first, a violent hue. At the autopsy made forty-eight hours after death, the base of the tongue was found excessively reddened, although vinegar applied to this organ immediately after the death of a dog, made the violet color instantly to disappear, and at the autopsy made forty-eight hours after death, the tongue instead of being red, was grayish and livid, or it was in the same condition, as the physicians who examined the body of Fougnyes found in his case, forty-eight hours after death; it was in the same state also in which I found this organ, when were intrusted to me the other portions of the body to search for some poisonous matter.

12th Quest. To perform upon a human liver of a patient who died at the Hospital Saint Pierre, at Brussels, the same processes and chemical experiments as those employed on the body of G. Fougnyes, and ascertain the result?

Ans. The liver of the patient above mentioned was subjected to the same experiment as those, by the aid of which I discovered a volatile alkali in the liver of Fougnyes, but did not furnish me *any trace of this alkaloid*.

13th Quest. To proceed in the same manner with the lungs of the same patient?

Ans. The same answer.

14th Quest. To prove and establish by experiments made in the presence of the judge of instruction, if nicotine produces upon the body of animals the same phenomena as those observed in the case of G. Fougnyes?

Ans. Keeping in view the modifications produced by the ingestion of vinegar, the pathological or organic phenomena observed in dogs killed by a considerable dose of nicotine, they are the same as those pointed out in the case of M. Fougnyes. In the answers to the queries of the 27th November, 1850, and January 14th, 1851, I explained myself so fully on these points, that I do not think it necessary to enter here upon any new discussions.

The properties of Nicotine compared with those of the Alkaloid extracted from the organs of Gustavus Fougnyes.

Each was liquid and colorless, presenting the pungent odor and disagreeable taste of tobacco. Each had a sharp, burning, very persistent taste, and was volatile. Both distilled without change in a current of hydrogen gas; both were inflammable, burning with a sooty flame, having a strong alkaline reaction, both to turnsal and curcuma. Each perfectly saturated acids, and was soluble in water and ether, while the other took it up from the water.

The salts of Nicotine and of the Alkaloid extracted from the body of Fougnyes, possessed the following characters.

Both possessed the sharp taste of tobacco; were not deliquescent; were very soluble in alcohol; were for the most part insoluble in ether; both crystallized in insoluble needles in ether, and was very deliquescent, combining with bichloride of mercury, and producing a double chloride crystallizing in needles. A watery solution in each case threw down the white bichloride of mercury, and the precipitate was insoluble in water. The hydrochlorate of the alkaloid, and of nicotine, combined with the bichloride of platina, and formed a double chloride, which crystallized in rhomboid quadrilateral prisms: a solution of each threw down the protochloride of palladium, of a chocolate color, the precipitate being soluble in an excess of the solution in each case, while the solution was colorless. The hydrochlorate of both, combined with protochloride of palladium, and gave red prisms, which were very soluble in water, and colored the liquid blood red. The hydrochlorate of both also combined with chloride of cobalt, forming a double chloride, which crytallized in flat prisms of a greenish hue, soluble in water, which they colored like red currants.

The oxalate of both when perfectly neutral, was liquid and oily, the oxalic acid crystallizing in very confused crystals. The tartrate of each crystallized in grains, while the phosphate of both crystallized in flat plates of a greasy aspect. A solution of both salts threw down a brown precipitate (resembling kermes), from the bi-iodide of potassium.

The precipitate of both reunited in a few moments under the form of oily drops, of an intense red color, which ended by taking on the form of a crystalline mass.

Signed,

Is. STAS.

I will conclude this part of the Essay on Nicotine by a letter which I wrote to the defenders of Bocarmé, in answer to one which they addressed to me.

PARIS, June 10th, 1851.

To Messrs. Lachaud and Depaepe.

Gentlemen:—You wish to learn my opinion regarding certain points relating to the properties and mode of action of nicotine on the animal economy; and you desire me to answer the four following questions:

1st. Is it proved that G. Fougnyes swallowed nicotine when lying upon his back?

2d. Has nicotine so powerful an odor that a person might not swallow a certain quantity in drinking some other liquid?

3d. Would tartaric acid, when mixed with nicotine, modify its poisonous properties?

4th. Would a liquid containing a considerable portion of nicotine, kill as speedily as pure nicotine? and would it not, according as it contained more or less of this poison, cause death in about five or six minutes, producing in the tissues lesions like those observed in the body of Gustavus Fougnyes?

The scientific interest which attaches to the solution of these questions, is so important, that I do not hesitate to say what I think regarding each of them.

First Question.—Is it proved that G. Fougnyes swallowed nicotine when lying upon his back?

To enable me to reply to this point, you send me a description of the organs contained in the mouth of the deceased, such as was given by the physicians who examined the body, Nov. 22d, 1850, that is to say, two days after death, and also as made by M. Stas on the 27th of the same month. The solution of the question, if it is possible, being founded on the state of these organs, it is necessary to transcribe literally, that which has been stated by these gentlemen.

We read in the report of the physicians, "The lips were pale, hard, covered with crusts of a grayish brown; similar crusts filled also the interstices of the teeth. The tongue was nearly twice its normal size; the mucous membrane, of a *blackish gray*, was destroyed through the *whole* extent of its upper surface, and along its edges; the mere touch of the back of the scalpel raised it in small strips, having but little consistence. That portion of this membrane, which covered the lower surface of the tongue, was red and injected. The

whole remaining portion of the buccal mucous membrane was equally red, burnt, and detached with the greatest facility, except that which covered the arch of the palate, which was of a grayish white. The same was the case with the *whole* mucous membrane of the fauces. The tonsils, *especially the left*, were larger, and less consistent than in their normal state; they could be easily divided. Lastly, the mouth contained a considerable quantity of a glairy fluid."

M. Stas informs us, "that the tongue was very large and swollen; that its mucous membrane, on its superior surface, presented *on the right*, for two-thirds of its floating portion, a *bluish black aspect*, although the rest was of a *blackish gray*; that it bore on its left the print of two impressions of teeth; that on this part there was some extravasated blood, and there were also observed some marks, made by a sharp and pointed instrument. The mucous membrane of the upper surface of the tongue was red, injected, and covered with a very viscid fluid, of a yellowish white. The mucous membrane, on its upper and lower surface, says M. Stas, was much softened, the *epithelium* was raised with the greatest ease. The tissues of the tongue were much softened; and but little, except the central portion, which has preserved its natural consistence." No mention is made of the state of the tonsils.

One is, at first, struck with the disagreement which exists between some portions of these two descriptions. It is worthy of note, that in both we find unequivocal traces of the action of a caustic poison. It is to be observed that the reports of the physicians (experts) do not make any mention of the *profound alteration of the right half* of the upper surface of the tongue, as compared with the left (as noticed by M. Stas); they do not establish any difference between the lesions of these two sides of the tongue; still more, when they describe the state of the tonsils, they find that it is the *left side* which is most affected. Being questioned on the 20th of March, 1851, that is to say, three months after the decease of G. Fougny, regarding the cause of his death, they state that it ought to be attributed to nicotine, and they explain, by its caustic action, the development of *black injected plates* upon the tongue, without noticing the difference which had been observed on the two sides of the organ. How can such a discordance be explained? Is it presumable that the physicians charged with the duty of making the post-mortem examination, when their attention had been called in an especial manner to the state of the mouth, which they have minutely described, would not have been struck with so remarkable a difference as that of which

I have spoken? It is difficult to suppose it. Is it possible that, on the 27th of November, when M. Stas examined the tongue for the first time, that this organ had already undergone a change of color, in consequence of its immersion for five days in alcohol? It is impossible to reject this explanation, without producing the results of experiments, which may prove its insufficiency. If I insist upon the difference between these two descriptions, it is because the solution of the question which occupies me is chiefly here:—What is, in fine, the motive which induces Mr. Stas to think that the swallowing of nicotine and vinegar took place, when Gustavus was lying on his back, with his head turned to the right side? It is, especially, the derangement observed on the right side of the tongue. Either cause the difference in the derangements to disappear, or clearly show that this difference was owing to the examination having occurred at two periods (the 22d and the 27th Nov.), and the reasoning of M. Stas will lose all its strength, and especially, since the physicians will say to him, How is it, if your statement is founded in the derangements which exist *upon the right*, that we have found the *left* tonsil more affected than the *right*? These considerations, which are of a nature to raise a doubt in my mind, are not the only ones which go to strengthen this doubt. It is very certain that when one swallows a liquid of an agreeable taste, such as water or wine, the fluid moistens equally every part of the mouth, and enters directly into the fauces without effort, and without occasioning the slightest unusual movement. Deglutition is performed as in the normal state, whether the person be erect or lying on his back. But is this the case, when a person, believing that he is drinking a fluid not only inoffensive, but even agreeable, is all at once surprised by the horrible taste of a poisonous draught? Certainly not. The first effort would be to reject the dilerious substance introduced into the mouth; but notwithstanding this, a certain portion would be retained; and is it not evident, that the presence of so acrid a substance would excite irregular movements, which would carry the liquid, sometimes to the right, sometimes to the left, and sometimes upward, etc.? Those only who have never experienced such an accident, will deny the truth of my observation. Besides, among caustic substances, there is none whose taste is more disagreeable than that of nicotine. I assert, that it is not possible to suppose that the deglutition of such a fluid could be performed in a normal manner. I will also add, what strengthens the doubt I have expressed, that it would not be possible for an individual, after taking nicotine standing, and falling after a short

time upon *his right side*, in consequence of the action of the poison, as has happened in nearly every instance, if not every one, and that in this position of the body the lesions of the tongue or the mouth should be more strongly marked on the right than the left side.*

These reasons appear to me sufficient to show, that *it is not proved* by the scientific documents transmitted to me, that Gustavus Fougnyes swallowed nicotine while lying upon his back, with his head turned to the right.

Second Question.—*Has nicotine so powerful an odor, that a person might not swallow a certain quantity, believing that he was drinking some other fluid?*

I would answer this in the negative. When nicotine is anhydrous, (deprived of water,) and it is very difficult to obtain it in this state, it has a sharp odor, which slightly resembles that of tobacco; if it contains water, this odor is so much the less sensible as the quantity of this liquid is greater. The odor of nicotine when cold, has seemed so feeble to MM. Boutron, Charlard and Henry, who have published a memoir, *ex-professo*, respecting this alkali, in 1836, that they state, that it is, so to speak, *none* at all. (*See Journal of Pharmacy*, 1836.) Admitting that these gentlemen did not prepare nicotine deprived of water, it is nevertheless true, that in the state in which they describe it, it has very little odor. I might quote a majority of writers, who have spoken of nicotine, and show that they are unanimous in saying that its odor has but slight resemblance to that of tobacco; on the contrary, all agree regarding the strong, pungent and disagreeable odor which it exhales when heated, and is reduced to the form of vapor.

Third Question.—*Would tartaric acid, which had been mixed with nicotine, modify its poisonous properties?*

Yes. Animals, which perish in one or two minutes after taking two drops of nicotine, would not die after taking eight or ten drops

* Orfila takes for granted, in the above reasoning, that a person poisoned with nicotine will fall upon his right side, because the animals poisoned in his experiments fell upon that side. But this could only have been accidental—a mere coincidence, and could not, therefore, justify the conclusions drawn from it. Besides, in similar experiments performed by Vandenbrough, Ulemincks and Fallot, the animals poisoned by nicotine fell as frequently on one side as on the other.—Tr.

of the same nicotine, if saturated with a slight excess of tartaric acid. They are nevertheless poisoned, for they experience vertigoes, weakness of the posterior limbs, and afterwards vomitings. I do not know for what object this question is offered me; for that reason, I deem it my duty to add, that in the preparation of nicotine by an acid (oxalic, tartaric, sulphuric, etc.), if the process is followed which is generally adopted, the nicotine obtained will not contain more than a slight trace of those acids, because they have been saturated with the potash which has been employed.

Nicotine, extracted from tobacco by tartaric acid, is then as active as that obtained by oxalic or sulphuric acid.

Fourth Question.—*Would a liquid containing a large proportion of nicotine, destroy as speedily as pure nicotine; and would it not, supposing it contained a greater or less quantity of the poison, cause death in five or six minutes, in either case producing in the tissues the same appearances as those observed in the body of G. Fougny?*

There exist, with respect to the action of nicotine upon the animal economy, notable differences as to the time necessary to cause death. Nicotine that is properly prepared and free from water, may kill a dog in 30 seconds, but more frequently it does not kill under one or two minutes. When it contains a small quantity of water, and is in that state in which it is most ordinarily obtained, prepared according to the process described by authors, the death of dogs does not take place under three or four minutes. When it contains a little more water, the animals do not perish till eight or ten minutes after the introduction of the poison. It may even happen, that if it is considerably diluted, dogs may recover, after experiencing spasmodic and tetanic convulsions. Every thing goes to prove, that the same is true as regards the human subject. Science needs observations on this point; but one cannot hesitate to believe, that a man may perish in two or three minutes, in eight, ten, twelve, or fifteen minutes, etc., according to the mode of preparing the nicotine, according as it contains more or less water, according to the constitution and strength of the individual, and according to the dose which may have been taken. In all cases, the lesions which nicotine will leave upon the tissues, will be analogous to those which were observed on the body of Gustavus, always recollecting, that they will vary in intensity according to the concentration and dose of the nicotine employed.

Such are the hints which, I believe, the interests of truth make it my duty to transmit to you.

Accept, gentlemen, the assurance of my distinguished admiration.

ORFILA.

NOTE.—M. RASPAIL has objected to the experiments of M. Orfila as inconclusive. He remarks, “the new experiments of Orfila, published in 1828, by no means authorize the conclusions which he and Leseur have drawn from them. For, instead of poisoning live animals, and examining the remains of their bodies several months after, they contented themselves with inclosing vegetable poisons in the entrails of a dog, with or without a mixture of ordinary aliments. Now it is easy to see that, in the midst of these inert and dead substances, poisons may be preserved for a long time without being totally decomposed. But would the case be the same if the vegetable poison had been submitted to the digestive action of a living animal? This is a point which such experiments are very far from enabling us to ascertain, and this was the objection which I brought at the time against the opinion maintained by Orfila.”—(*A new system of Organic Chemistry, &c.*, Lond. 1843. p. 522.)

Although we regard M. Raspail as poor authority in matters of science, yet the objection above urged certainly has weight. In the case of Dr. Castaign, indicted for the murder of Ballet, in 1822, by giving him *acetate of morphia*, Orfila, who detected no morphia in the stomach, testified that “the absence of poison in the body might have been due to vomiting, absorption, and the difficulty of detecting it.” As the patient lived 32 hours after symptoms of poisoning commenced, although he was supposed to have taken 26 grs., we think it highly probable that most, if not all the morphine, had, in that time, disappeared from the stomach, even independent of vomiting. Failure, therefore, to detect a narcotic poison after death, is not to be regarded as conclusive evidence that none had been taken during life; and the curious fact, discovered by Orfila, that vegetable alkaloids, introduced into the body after death, will resist decomposition for weeks or months after, loses somewhat of its value in medico-legal cases.—TRANS.

PART SECOND.

CRITICAL ANALYSIS.

ART. VI.—*General Pathology, as conducive to the establishment of Rational Principles for the Diagnosis and Treatment of Disease.* A course of Lectures, delivered at St. Thomas's Hospital, during the summer session of 1850. By JOHN SIMON, F.R.S., one of the Surgical Staff of that Hospital, and Officer of Health to the city of London. Philadelphia: Blanchard and Lea, 1852. pp. 211.

THE lectures, which are comprised in this volume, were originally published in the *London Lancet*, from which they have been reprinted, after undergoing "such further correction and extension as the Author's other engagements have allowed him to make. They are twelve in number, and severally discuss—I. *Introductory considerations as to the subject-matter, limits and applications of Pathology.* II. and III. *Blood in Disease.* IV. V. and VI. *Qualitative Derangements and Quantitative Irregularities in the distribution of Blood.* VII. and VIII. *Tumors.* IX. *Scrofula.* X. *Nervous Diseases.* XI. *Evacuative Medicines in relation to Humoral Pathology.* XII. *Morbid Poisons.*

It will be seen, both from the title of the work as well as the several topics considered, that Mr. Simon has set before him a very important task. In the present advanced state of pathological science, its most successful cultivators ought to be able to answer, satisfactorily, the question too frequently asked: Of what practical value is a knowledge of Pathology? However clear it may be to many, not *all* are prepared to admit Mr. Simon's assertion: "undoubtedly practice is successful in proportion as it is based on Pathology; undoubtedly you will save more lives, and relieve more suffering, by striving, diligently and constantly, to establish your principles of treatment on

this scientific foundation." To the profession at large no subject has greater interest or importance than the application of the principles of pathology to the science of practical medicine. As this work emanates from a responsible source, and embraces many of the more advanced opinions of pathologists, we propose to notice it somewhat at length; not so much for the purpose of criticism, as to lay before our readers some of the more recent doctrines in this comparatively new department of Medicine.

The introductory lecture is mainly devoted to the consideration of the words *Science* and *Disease*, or *the Science of Disease*, as embraced in the term Pathology. The distinctions drawn and the course indicated to be pursued in pathological investigations, are of importance to the student who is entering upon this branch of study. With this remark we pass to portions of the work of more general interest.

Blood in disease is treated under the several heads of (1) *Morbid Ingestions*; (a) common and (b) morbid poisons; (2) *Errors of Egestion and Excretion*; (a) retention of what ought to be excreted; (b) drain of what ought to be retained; (3) *Diseases affecting the intrinsic Metamorphosis of Blood*.

In considering the nature and office of the fibrin of the blood, Mr. Simon inclines strongly to the opinion of Zimmerman, that it is an "effete material in the way to be eliminated." This view also finds an earnest advocate in Mr. J. Hughes Bennett, whose speculations on the blood have been published in the *Edinburgh Monthly Journal*. We are not familiar with the arguments which the German physiologist has advanced to sustain this doctrine, but presume they are for the most part the same as are here brought forward. They are briefly the following: Fibrin is not diminished, but often increased, by bleeding. In circumstances of exhaustion, weakness and inanition, during diseases essentially anæmic, during violent fatigue, and the like, its proportion has been found as high as in inflammation. Under the same circumstances the red globules, known to be potential elements of the blood, are diminished. There is little or no fibrin in the blood of the fœtus, none in the egg, none in the chyme, and less in the blood of the carnivora than in that of the herbivora. From these facts "the inference seems unavoidable, that it must be considered an excrementitious product derived from the waste of the tissues or the oxidation of the blood, and in progress of elimination from the system. This conclusion, carried into the domain of pathology, would lead us to suppose that an augmented pro-

portion of fibrin in the blood, whether occurring in active disease, or within the limits of apparent health, can be taken as an indication only of increased labor and waste in certain elements of the body, not of an increased development in the resources and nutrition of the blood. And on the same grounds it would appear that a super-fibrination of the blood, in acute inflammatory diseases, must be regarded as a consequence and effect of those diseases, not as their cause, and not as a primary affection."

It cannot be denied that many of these objections to the important office which fibrin has been supposed to hold in the circulating fluid, are forcible and difficult to meet. Able investigators and supporters of the old theory have established the very data from which others derive these objections. But facts occur to us which make this theory not more tenable than that which it is designed to supplant, and forbid our receiving it in "full faith and credit," until it brings to its support other than mere negative considerations. For our present purpose, however, can we ask a better proof of its crudity than Mr. Simon himself has furnished us? In speaking of the ulterior changes of fibrin, he remarks that "its coagulation is its *rigor mortis*, a change which essentially belongs to it as a part of its process of death, a change which befalls it when the whole bodily life ceases." Again he considers it as certain that after its effusion "fibrin may remain stationary, and be nourished; or it may degenerate and decay." In the first condition it participates just enough in the nourishment of the adjoining surface to maintain a "half-vital existence;" in the second it undergoes fatty degeneration, which is its final death and decay." In this explanation of the ultimate changes of fibrin, it is obviously assumed that it is a living material, a vital element of the blood, subject to the laws of life and death. If not capable of organization, still it may be nourished, and may maintain a "half-vital existence," and in its fatty degeneration undergoes its final dissolution. If an excrementitious product derived from the waste of tissues, or the decay of the blood itself, how can it be considered capable of being nourished when effused on the surface of membranes, or of undergoing the process of decay and death?

Mr. Simon does not consider it an established fact that fibrin is unsusceptible of ulterior development, yet to such a conclusion his investigations strongly incline him. The following is his opinion of the office, which fibrin performs in the regeneration of tissues—an office though menial in comparison with the rank once given it, quite incompatible with the doctrine of its effete or excrementitious nature.

"So far," he remarks, "as my knowledge extends of adhesive inflammation, and of the several reparative processes, I see no evidence that fibrin takes a more important part in them than that of holding the true albuminous blastema within its meshes, and thus occasionally serving as a provisional matrix and scaffolding for the development of cells, fibres and blood-vessels."

Among the evil consequences of an *over-fibrinous* condition of the blood, are mentioned the vegetations formed on the valves of the heart in certain diseases. These, Mr. Simon thinks, have been too hastily called the results of inflammation. He would rather regard them as depositions of the fibrin of the blood passing over them, mechanically produced. For he doubts if the lining membrane of arteries is even susceptible of inflammation: 1st, because it has no blood-vessels of its own; 2d, the *vasa vasorum* do not penetrate to a sufficient depth to influence materially its nutrition. Hence he concludes, "it seems almost certain that the ordinary nutrition of the lining membrane of the circulating system is derived directly from the blood with which it has contact; and that its morbid changes depend—not on any inflammatory condition due to the *vasa vasorum*, but on those humoral changes, those variations in the qualities of the blood, by which it is more immediately and more certainly affected than any tissue of the body."

The opinions here advanced are of such practical importance as to justify an extended quotation. He continues: "I believe that the origin of these vegetations is directly humoral; that they arise as fibrinous precipitations from an overcharged solution; the valves incrusting themselves with fibrin, just as a stick in certain streams coats itself with a calcareous envelope; and that the preference shown for the left side of the heart admits of explanation by reference to the peculiarities of its contents—the new-made arterial blood."

To prove that arterial is more prone than venous blood to precipitate its fibrin, he has experimented by carrying a single thread through an artery and a vein transversely, and allowing it to remain twenty-four hours. The uniform result proved that "the arterial blood with the utmost readiness deposits its fibrin on the thread; the venous blood with the utmost reluctance." The masses deposited upon the thread from the arterial blood resembled entirely the vegetations found on the valves of the heart, a single deposit being sometimes of the size of a grain of wheat, "always of a pyramidal shape, with its apex down stream, and its base attached to the thread."

In the vein the thread operated as a simple obstruction, not becoming coated with fibrin but interrupting the circulation with a black clot on its distal side. From this it follows that,

"The disease in which these deposits are so frequent, is one of intense over-fibrination of the blood, and one in which almost certainly there are other conditions besides *quantity*, making the fibrin easy of precipitation; the left side of the heart has preference, because it is the arterial side, and because arterial blood, as we have seen, readily parts with its fibrin; the valves, and particularly their streamward surfaces, are chosen for the deposit, because their position exposes them chiefly to the friction of the current; so that the whole curious selection of site for the deposit resolves itself into the concurrence of two conditions, which are fulfilled in that one spot of the vascular system—namely, the greatest chemical tendency to the deposition of fibrin, with the greatest mechanical facilities for its entanglement."

"In introducing this subject, I mentioned that it was one of great practical importance. Many people bleed locally, or even generally when they hear an endocardial murmur arising in the course of rheumatic fever. In their eyes, the new disease is endocarditis: and every thing ending in *itis* is thought, in at least a majority of instances, to be benefited by bleeding. Therefore, gentlemen, do not be in a hurry to call it endocarditis; and as for bleeding, all I would venture to say (for of course the treatment of this physician's disease don't fall within my province), is to assure you of the pathological fact, that you may bleed a patient to death, without altering (except probably to increase) the proportion of fibrin in his blood."

The treatment of acute diseases, in the course of which endocarditis is likely to occur, should be, according to this view of its pathology, with remedies which will be taken into the circulation, and act as solvents to the fibrin. One of the most powerful of this class is nitrate of potash, which, if taken in large doses, a certain amount will be retained in the blood, and prevent those fibrinous concretions, by increasing the solubility of their material. This remedy, in acute rheumatism, is highly praised by M. Bonnet, of Lyons, who believes with M. Gendrin, that it prevents inflammation of the endocardium.

Passing from the *qualitative* derangements to the irregular *quantitative* distribution of blood, we have an interesting discussion of the proximate cause of hypertrophy and inflammation—processes which involve the same condition of the blood-vessels. The initiatory step, or first change which occurs, in an inflaming or overgrowing part, and which leads to its becoming loaded with blood, is believed not to depend upon nervous influence, "but is a direct change, operated by the living molecular structure of the part on the blood which

traverses it, or on the vessels which convey that blood. "Ubi stimulus, ibi affluxus" will stand, then, as a law of reciprocal relation between the solids and fluids of the body, which does not of necessity require the intervention of a nervous system for its initiation."

The first "momentum of the process" being settled, the second condition, or the enlargement of the blood-vessels, to accommodate the increased flow of blood, is referred to the nerves as agents. Mr. Simon adopts the theory of Professor Henle, that the law of reflected stimulation, when applied to the muscular coat of arteries, is reversed; and, instead of producing contractions, as in the case of muscles in general, causes relaxation. This condition of *reflex-relaxation* is comparable to paralysis, and is the very opposite of the opinion that Mr. Simon thinks generally prevails among British physiologists, viz., that in inflammation and hypertrophy, the arteries of the affected part act more vigorously, receiving whatever amount of blood the local changes may require, and propelling their contents with greater energy. In the present imperfect state of our knowledge, he deems it rash to offer "any complete pathological theory of the origin and progress of the inflammatory and hypertrophic processes," but the following are his "*probable* conclusions in the matter."

"1. In the chain of events which terminates in hypertrophy or inflammation, the first act relates to the influence exerted by the elements of the part on the materials of the blood circulating through it. and consists in an alteration (perhaps in hypertrophy only a quantitative alteration, possibly in inflammation also a qualitative alteration) in those changes which the part naturally works on the blood, as the indispensable condition of growth. The growing elements of the part, hurt by physical violence, or affected by extremes of temperature, or thrown into rapid chemical changes, or overburdened with their own specific stimuli from the blood, strive to grow more, or to grow differently, than in their previous state. The sudden origination of this effort (as it occurs, for instance, after mechanical injury) suffices apparently in itself to derange the currents of the capillary circulation, to flood the tissue with serous exudation, and to lead to those microscopical phenomena which are considered pathognomonic of inflammation.

"2. The condition of a part in which the organic changes are thus accelerated (whether in the form of hypertrophy or inflammation), is capable of inducing, in the muscular arteries which lead to it, a state of enlargement or increased perviousness, which determines to the part a larger afflux of blood; and it is in a high degree probable that the manner in which this enlargement occurs, is according to what we technically call *reflexion*; that a certain impression from the part is conveyed centripetally by its sensitive nerves, and is responded to by a return-current, is to induce a relaxed condition of

those muscular fibres which regulate the calibre of the artery, and by this relaxation to suffer an increased transit of the blood to the inflaming or overgrowing part."

We are by no means satisfied with Mr. Simon's reasoning upon this point; it has too much the character of mere theorizing. It is a positive absurdity to speak of the reflex-relaxation of arteries in hypertrophy, and of their reflex-contraction in atrophy: for the author remarks that the "same line of argument would lead us to suspect that organs in a condition of extreme inertia and unchange, may originate centripetal impressions which would conduce, through nervous influence, to reflex-contraction of the artery." There is no necessity for this special and anomalous endowment of the nervous system to explain the phenomena of inflammation or hypertrophy. It has been proved beyond a query, that the muscular coat of arteries is supplied with nerves, that they regulate the calibre of vessels in their physiological and pathological state; that the primary effect of stimulation is contraction of the artery, and the secondary, dilatation. Weber witnessed this contraction in the use of galvanism; Wharton Jones, on the application of a solution of common salt to the web of a frog's foot. (*Guy's Hospital Reports*, Vol. VII.) Mr. Simon has repeatedly seen the same. Weber also observed that when the galvanic current was too powerful or too long continued, the artery lost its power of contraction for a time, and yielding to the pressure of the circulation, presented an aneurismal bulging. Applying these facts to the process above referred to, and we have as the first result of irritation contraction of the arteries; as a second, their dilatation. The latter may be comparable to paralysis, but it is rather an *actual* than an *active* paralysis, as Mr. Simon would regard it. The analogy of muscular contraction and relaxation in general, would force upon us such conclusions; and we should regard it not less unphilosophical to attribute the relaxation of any muscle following its contraction to a reflex-relaxation, than in the case of the dilatation of an artery after *its* contraction. Nor are we prepared to admit the influence of molecular change (a vague term) among the antecedents of inflammation or hypertrophy. Waste and supply in the animal economy, it is true, are balanced, but this does not imply that the former determines the latter. On the contrary, in many if not in all instances, these two conditions seem to exist independently of each other, as regards cause and effect, both states being determined by a third cause. The irritant which excites the inflammatory changes in a part, also induces the increased flow of blood to or

through that part by its effects on the blood-vessels, as already stated. The same vigorous exercise which determines an increased waste of tissue in the hypertrophied heart, or the blacksmith's brawny arm, impels larger and more rapid currents of blood along the arteries distributed among the muscles of that heart or limb. We are therefore inclined to the opinion, that molecular change is altogether a secondary act both in inflammation and hypertrophy, and bears no causative relation whatever to the initiatory stage of either process.

The two following lectures devoted to *tumors* present, in a narrow compass, a fair abstract of our present knowledge on this subject. They, of course, fall far short of the very elaborate series of lectures more recently delivered by Mr. Paget, before the Royal College of Surgeons, to which we would refer all who wish to study this interesting class of surgical affections in a truly scientific manner.

After dividing tumors according to their histological characteristics, and treating them individually under these several heads, Mr. Simon proceeds to a new classification for the purpose of analyzing his subject in a more practical manner. The first class are *tumors by accumulated secretion*, and may arise from a redundant secretion in vesicular structures, or from mechanical retention of secreted material in follicular structures. The second class are characterized by a *partial hypertrophy*, and consist in an over-development of a particular solid structure of the body, but being limited to a portion only of the tissue invaded. To this class belong tegumentary tumors, whose characters essentially are *skin in excess*; vascular tumors, as the naevus, consisting of *vessels in excess*; and fatty tumors, which may be identified as *adipose tissue in excess*. The third class are tumors of *adjunctive hypertrophy* or *hypertrophy by apposition*, such as the bony and fibrous tumors. This class differs from the former in being adventitious instead of interstitial. These three classes of tumors are local in their origin and development, and are cured by removal. The fourth class are *cancerous* growths, and a few points of interest in respect to them only, shall we have space to notice.

Mr. Simon regards the evolution of a cancerous tumor in the body as marking a new state of things in respect to the patient's total organization and vitality, "just as much as the first acting of the kidneys in the embryo and of the lungs in the infant respectively mark new eras in the animal's progressive development." He thus defines cancer :

"Substantially it is a new excretory organ. Under the pressure of some mysterious constitutional necessity, a growth arises

which (in its typical form) tends essentially to acts of eliminative secretion, just as distinctly as the healthy liver or the healthy kidney." "It consists essentially in the establishment of a new vent; a new organ of elimination, and that organ develops itself according to the type of other secreting organs; it develops itself as an apparatus for the formation of deciduous cells."

No single point is more strongly urged throughout this work than the constitutional nature of cancer, and yet our author proceeds to speak of the different methods by which this disease may extend itself to other organs and tissues, and *contaminate* the system. The first is by *immediate contact*, as in continuous or in contiguous surfaces; the second, by *intra-vascular development*, which depends upon the entrance of cancer-germs into the circulation through some lesion of the veins; the third, by *continuity of blastema*, and is effected by the lymphatic canals. It is obviously improper to limit the propagation of a strictly constitutional disease to any or all of these different methods, or indeed to speak of its propagation at all in the same system. If a local affection, it may extend to other organs, and finally contaminate the whole system; but, if constitutional, its localization is accidental and not essential, and its appearance in several organs consecutively, does not imply propagation by any of the above methods. The question of the constitutional nature of cancer is not by any means so definitely settled in the profession as in Mr. Simon's own mind. At a recent discussion in the *French Académie de Médecine*, most of the practical surgeons of Paris, including Blandin, Gerdy, Roux, Amussat, Berard and Lisfranc, maintained that this disease was at first local, and that the cachexia was induced by absorption from the morbid growth. (Dr. BENNETT, *Monthly Journal*, 1847.) In this country surgeons generally take the same view of the subject, and recommend extirpation in the early and uncomplicated stage.

It is a little surprising that Mr. Simon should limit the propagation of cancer by intra-vascular development to a system already suffering from the cancerous cachexia, and deny that there is any evidence or even probability "that the same transferability of the disease relates to any other organism not under the influence of the specific cachexia." He does not inform us who first proved this mode of propagation, for Mr. Simon is chary of authorities, but, we doubt not, he had in mind Langenbeck's experiments. This physiologist injected first the secretion of a cancerous ulcer into the veins of dogs, and found that it produced lobular abscesses. He next injected the expressed fluid of a non-ulcerated medullary tumor, which had been recently extirpated; the animal suffered intense dyspnœa, but sur-

vived, and after a time was killed. The lungs were found to contain small tumors, identical in general properties, and also as respects elementary cells, with those of the tumors in question. (HASSE'S *Path. Anat.*) This experiment on which rests the opinion that the veins are efficient in the propagation of cancer, also proves that a system free from the disease may become inoculated, and presents a most stubborn argument in favor of the local origin of cancer. We would add that this experiment has since been unsuccessfully repeated, and that it failed in the hands of Vogel. Dr. Leidy, of Philadelphia, has recently instituted a series of experiments which go far to prove the inoculability of cancer. He introduced a slip of encephaloid cancer, taken from the dead body of a female, thirty-six hours after its removal, under the skin of the back of a frog. After a time he exhibited this frog, still living, to the members of the *Phil. Acad. of Nat. Sci.*, and, on making an incision through the integuments, the fragment of cancer was discovered to have formed a vascular attachment with the skin, and to be itself of a fine red color from the network of capillaries traversing it. The mass had not increased in size, and many of its structural cells were unchanged, while others had become broken down. Dr. Leidy was of the opinion that, if fragments of cancer when introduced into cold-blooded animals still continue to live, when introduced into warm-blooded animals they would most probably continue to grow. (*Proceed. of Acad. of Nat. Sci., Phila.* 1851.)

As respects the pathological relations of the different forms of cancer, Mr. Simon regards encephaloid as its higher, and scirrhus its lower, manifestation. Compared in their mutual relations they are the cell-forming and fibre-forming sequels of inflammation; "the intenser inflammatory acts, running into the pure cell-forming process of suppuration, while the less intense inflammatory acts deviate into the slower construction of fibre." Encephaloid represents the highest, and scirrhus the lowest degree of malignity. The proportion of the nucleated fibrous material therefore measures the intensity of the cachexia; the "fibrous transformation, so far as it extends, illustrates the operation of common, not of specific, developmental influences in the part. So with regard to those compound granular corpuscles, constituting the yellow softening material in cancerous growth, there seems no difficulty in adopting the view (lately urged by Virchow), that these bodies represent the degeneration of cells, and consequently, *cæteris paribus*, evince a retrogressive tendency in the effusion where they occur. If we may consider these

points as established—that fibre, *quoad* its existence and quantity, illustrates an abortion of the cancer growth—that compound granular cells, *quoad* their existence and quantity, illustrate an exhaustion and retrogression of the morbid influence, we possess some material in pathology (although not always applicable in practice) for guiding our prognosis as to the probable recurrence of the disease.”

We may notice in connection with this reference to Virchow, the opinions entertained in regard to the spontaneous curability of cancer. Hodgkin and others have observed its transformation into ossiform matter. Dr. Bennett has examined specimens from the human subject of the same character. Prof. Bochdalek, of Prague, in a memoir “On the Healing Process of Cancer in the Liver,” describes cancer of this organ as breaking down into a cream-like matter, the fluid portions becoming absorbed, and the remainder shrinking together, and often corresponding to a fibrous or fatty mass, containing collapsed cancer cells. He has observed cicatrices in all stages of formation, and even instances of cancer in one part of the liver, and cicatrices in another. He has found these evidences of the degeneration of cancer as often as six or seven times in every sixteen or seventeen cases of cancer of the liver. (BENNETT'S *Art. Op. Cit.*)

The idea of *curing* cancer, however, by a surgical operation, Mr. Simon characterizes as absurd. “Surgery, perhaps, at times gets the credit of cures which nature had already achieved; and sometimes, perhaps, owing to blunders and uncertainties of diagnosis, the non-return of cancer after operation has depended on its non-existence before the operation—on the supposed cancer having been a fibrous or sero-cystic tumor, or some mere inflammatory swelling.” But there is a certain latency or chronicity in its development, of which the surgeon may take advantage to check its progress. If the entire cancerous structure be removed, and no cells remain either at the original site of the growth, or in any of the neighboring glands, a certain period will elapse before the disease will manifest itself again. And for this reason, cancer “requires a cell-growth for its purpose, and it is at the least doubtful whether it can avail itself of any normal cell-growth in the body; whether it can *cancerize* any existing cells, or whether it must not start *de novo*, and begin by organizing a set of cells for itself.” The construction of this cell-growth requires both time and intensity of cachexia; and before the system will proceed to the formation of another eliminative gland *de novo*, will tolerate a considerable degree of whatsoever conditions form the cancerous diathesis. Hence “the whole tact and discrimi-

nation of the surgeon in deciding whether an operation may probably lead to the patient's relief, have to be brought to bear—first, on determining the total absence of any secondary deposits, or any irremovable extension of the growth which might serve as a centre of new development; and secondly, on measuring the intensity of the constitutional cachexia." In a clinical lecture on "*Operations for the Removal of Cancer*," delivered within the present year, and published in the *London Lancet*, Mr. Simon remarks at length on the indications for the resort to the knife in the treatment of this disease. They principally belong to the second consideration, or the intensity of the constitutional cachexia. First, and most important, in estimating this condition is the *rate of increase*. Encephaloid is generally, but not always, the most rapidly developed. A case of scirrhus of the breast is mentioned, which ran its course in *eight weeks*. The rule which he advances is, that the "chance of doing good by the removal of a cancerous tumor, as compared with others of the same species, will be in inverse proportion to the rate at which the tumor has grown." The second point of inquiry is in regard to the amount of *inherited liability* to cancer: hereditary taint is estimated to exist in one-seventh of the cases where cancer occurs. The third circumstance to be considered is the *form of cancer*. Certain forms always recur, as encephaloid of the eye, and probably equally the same is true of encephaloid of the testis. That form of cancer on which he operates with the least hesitancy, is of the *epithelial* kind, as it affects tegumentary tissues, always keeping in view, however, the state of the glands. For even this form of cancer, representing the minimum of the true cancer-growth, and for which ordinarily severe operations may be undertaken, is no exception to the rule of refraining to operate when secondary deposits exist.

We make the following extract from the Clinical lecture above referred to, in respect to the age of a cancerous growth at which it is most desirable to operate.

"There is a strong popular impression in favor of early extirpations, but I must say that this impression seems to me to have been hastily formed, and that it cannot be received without qualification. In the epithelial form of the disease, indeed, I do think it desirable to operate as soon as I am satisfied as to the nature of the growth, partly because of the greater degree in which it may be considered a local disease, partly because of the marked difference in its course which is made by any contamination of the lymphatics—an evil which delay would render more probable; but in the other sorts of cancer I am by no means equally persuaded of the advantages gene-

rally ascribed to early operations. It would require very copious statistics, which we do not yet possess, to speak with certainty on the point. I will only venture to say that I entertain grave doubts as to the practical expediency of extirpating solid cancerous tumors in early stages of their progress, and that some of the quickest and most fatal relapses which I have witnessed, have been cases thus operated on. My impression, both from pathology and practice, is rather that, for a majority of cases, one might best economize the life of one's patient by deferring the operation till special circumstances (extreme pain or impending ulceration) should make it imperative; thus suffering the constitutional disease to exhaust itself as far as possible in the organ which one meditates removing."

Our author looks to chemistry for a knowledge of the rational treatment of cancer, "for pathology distinctly traces a chemical function in the disease." We must have a comparison of the total chemistry of the cancerous body, with the total chemistry of the healthy body, and such investigations as will found themselves "on an exact and comprehensive knowledge of those natural changes which occur in the progressive and regressive metamorphoses of the blastema of the blood." Until such investigations are made, we must give up all hope of cure, or resort to speculative and empirical treatment.

Mr. Simon limits the term *scrofula* to such diseases as are "essentially associated with tubercular deposit," believing that at present "there is no evidence to justify us in extending to other diseases the particular formula which includes the pathology of tubercle;—this, namely, that under the influence of a constitutional bias, which is peculiarly susceptible of hereditary transmission, and peculiarly difficult of artificial generation, there occur local deposits of an organic material, which is insusceptible of ulterior development." *Scrofula* may be associated with general debility and defective nutrition, but this is accidental, not essential, and is incapable of hereditary transmission. He does not deny that it is artificially producible, but believes that its producibility by experiment has been greatly overrated. The most important condition in the experiment is change of climate; without this its production in any one generation free from taint amounts almost to an impossibility.

On this subject we have the following interesting remarks in regard to the development of tubercle in the liver of rabbits poorly fed.

"Four or five years ago, when I was busy with experiments on this subject, I received from a friend the so-called tubercular liver of a rabbit; the deposit was white, not very firm in any part, and in some spots diffuent. It extended in several directions throughout

the thickness of the organ, reaching its surface, and bulging it at various points; but there was something in its appearance which struck me at first sight as unlike tubercular deposit; it appeared continuous in lines, rather than in masses; it seemed to branch, too, in the direction of the ducts, as though it were dependent on their anatomical arrangement. I proceeded to examine it with a high power of the microscope, and found, to my astonishment, that the whole mass consisted of the minute oblong eggs of some entozoon."

The examination was frequently repeated, but always with the same result, these ova being found also in the gall-bladder, in the whole length of its intestinal canal, and in some places following the inflections of the mucous membrane; and lining its follicles almost like epithelium. On close examination, the alleged tubercular deposits in sheep, cats and dogs, prove to be instances of parasitic development, or of some morbid product foreign to human tubercle.

The following views of the pathology of tubercle will be read with interest:—

"The material products of the scrofulous diathesis, consist in some mis-developed proteinous ingredient of the lymph and blood. The essence of this mis-development lies in the fibriniform solidification and concretion of something which should remain fluid in the plasma of the blood. I call it *fibriniform*, because, though it is not identical with fibrin, it probably arises in some analogous method of formation, and undergoes similar final metamorphoses. This solidification occurs in the ascensive development of the lymph and blood. It occurs with an infinite preference in the lymph-glands and in the lungs. In the former, where lymph is brought into intimate relations with arterial blood; in the latter, where lymph (which is constantly accruing to the blood) first comes into immediate relations with the atmosphere. It seems, then, to affect the total blood, only by reason of the lymph which is contained in it; in other words, not to be a disease of the total blood, but one of the lymph or nascent blood. Precipitability by the atmosphere is the characteristic of this morbid product: its places of election are determined by this peculiarity. Tubercles form where lymph and blood get their first opportunities of increased oxidation. In accordance with this law, vascosity of the blood precludes the tendency to tubercular deposition. The fibriniform produce of scrofula is insusceptible of development—it is a dead concretion. Like true fibrin, it may become the seat of calcareous deposit, and may thus form a permanent inorganic concretion. Like true fibrin, it chiefly tends to soften, and its softened substance is copiously infiltrated with fat; probably it undergoes a fatty degeneration, either of the substance of other organs, or of some previous infiltration in those organs. Possibly this tendency may indicate that the fibriniform material of tubercle, in its molecular state, can undergo, either in the blood or in those organs, the same degenerative

changes as affect it in its concrete condition. In short, the scrofulous diathesis consists in an inherited peculiarity of blood-development, under the influence of which, the nascent blood tends to a molecular death, by super-oxidation. Partly it may appear, that these dead proteinous elements can undergo, within the stream of the circulation, such degenerative changes as will qualify them for discharge by excreting organs: partly it may appear, that these changes lead to fatty accumulations in the endothelium, or in the parenchymatous bastema of such organs; but mainly and characteristically, it is the way of those dead proteinous elements, to concrete in the organs where their precipitation has been determined, and there to construct the fibriniform masses called *tubercle*. These masses undergo changes of doliquescence and destruction, which tend to their ultimate expulsion from the system, but which, as they entail the disorganization of all surrounding textures by inflammatory and ulcerative processes, are commonly defeated in this tendency when they occur in vital organs (as the lung), or attain it by the complete sacrifice of the invaded organ, as when present in lymph-glands, testicle, or breast."

In respect to tubercle in the lymph-glands, Mr. Simon advances the opinion once held by Andral (*Path. Anat.*, Vol. II.), that it is not a deposit from the blood-vessels, as elsewhere, but an accumulation in the tubes of the gland of their own morbidly coagulable or inspissated lymph, and is therefore not a disease of the gland, but of the lymph of the gland. This view, however, is not well considered; for anatomists have frequently observed that mercury traverses the lymphatics freely when injected into glands affected with every degree of tuberculization. Mr. Böeker always found it possible to inject tubercular mesenteric glands with mercury, their lymphatics being quite permeable.

Mr. Simon contends for the incompatibility of tubercle and cancer, for "they are pathological antitheses in regard of the blood." In tubercle, "the blood dies still-born; it never attains its maturity of growth or function; it stops short of the distributive arteries of the body; it never reaches the aorta; it perishes and decays on the threshold of the circulation. In the contrary case of cancer, there is obstinate excess of vitality, which will not be quenched." Nevertheless we are satisfied that he is in error, for in several instances we have demonstrated the existence of these two forms of disease in the same subject. But we have the high authority of M. Lebert, who denies that these two dyscrasies exclude each other, and publishes several cases to establish his position. A *Memoir upon the Coincidence of the Tubercular and Cancerous Diatheses, with Scrofulous Symptoms*, by Dr. A. LEGRAND, translated from the French, and

published in the fifth Vol. (N. S.) of this Journal, will be found very conclusive upon this point, as it contains a number of accurately reported cases. Dr. Walshe also (*Disease of Heart and Lungs*) says, "the existence of cancer in any organ is unfavorable to the presence of tuberculous disease; but tubercle and cancer *may* coexist, even in the same lung." Mr. Ancell, in his recent very elaborate *Treatise on Tuberculosis*, sustains the same view.

On the treatment of scrofula our author is necessarily brief, for he has nothing new to offer. Cod-liver oil may prove beneficial from its alleged influence over the "initiative acts of blood development," but at present it is a matter for continual observation.

Impressed with the belief that a relative venosity of the blood opposes the development of tubercle, he considers change of climate from a higher to a lower latitude very important, as tending to produce this condition of the blood by the respiration of a more rarefied atmosphere. Statistics, however, have long since demonstrated that elevated temperature is of minor importance in the selection of a climate for the tuberculous. From the British Army Reports we learn that, in the West Indies, the proportion of soldiers attacked with phthisis annually, is doubly those stationed in England. So much more favorable, indeed, is the climate of Canada than the West Indies, or even England, to the consumptive soldiers, that the British authorities send this class of persons from the latter to the former country as affording them the best chance of recovery. The proportion of deaths by phthisis in London, is nearly four times as great as in Sweden. The same is true of our own country, phthisis being most prevalent among our soldiers in Southern latitudes, least in Northern inland regions.

We shall bring to a close our notice of this work with some extracts from the two concluding lectures. The following are Mr. Simon's conclusions in respect to the pathology of *Excretions*.

1. "One organ can excrete for another only such materials as are common to both. All organs can excrete water, and perhaps certain salts, for one another. Thus far—*i. e.*, in respect of such materials as are common to both—one organ may be said in health to antagonize another, or in disease to act vicariously for another, but no further. There may be a sanguineous derivation from one to another, but not a substitution of activity.

2. "To a very limited extent, certain retained excretions may undergo in the blood a chemical change, which brings them within the means of appropriation of some other organ than that to which they specially belong; thus, in the experiments I cited, urea for a time seemed to be excreted from the system by the mucous mem-

brane of the stomach—not, indeed, as urea, but as carbonate of ammonia; thus, again, carbon and hydrogen, when incapable of passing off in their respective gaseous combinations, seem liable to be secreted as fat.

3. "By means of drugs having special organic affinities, such as cubebs for the kidney, elaterium for the intestines, arsenic for the stomach, we are able, almost indefinitely, to produce and accelerate, in the excreting surfaces of the body, certain changes which tend, in each case, to eliminate the particular drug with more or less aqueous exudation, but which fail to augment, or, at the utmost, only momentarily augment, the discharge of material specific to the surface. And,

4. "As these accelerated molecular changes always involve the occurrence of artificial hyperæmia, so we may expect, and we do really find, that excretions thus abnormally excited will always contain evidence of the congestion we have induced, presenting (just like inflammatory effusions) the several grades of albuminous admixtures, to which presently the fibrin of the blood, and, subsequently its colored particles, are added in increasing proportion."

Guided by these results our author teaches that evacitative medicines, in humoral diseases, avail nothing. The materials which humoral diseases prepare in the blood for excretion by any given surface or organ, are more efficient stimulants of that surface or organ than any we can administer. Against that which is specific in the malady, our diuretics, purgatives, diaphoretics, &c., are powerless. They may establish counter-irritation to the relief of the inflamed and over-tasked organs, but in their nature or action they have no efficiency in hastening the elimination of the "peccant humors." We must look deeper into the action of drugs for therapeutical influence over the cause of humoral disorders. Our remedies must not be such as expend their force on any particular organ or secreting surface, but on the blood and tissues, accelerating or retarding that metamorphosis of their material which, sooner or later, furnishes the elements of discharge.

The only drugs which as yet he is satisfied hasten the dissolution of certain materials of the blood, are mercury and antimony. These, when introduced into the circulation, "represent exactly the phenomena of true humoral diseases; they effect or hasten a definite metamorphosis in the blood, under the influence of which the materials for excretion become sensibly increased; they do not stimulate the organs on which they act by means of any specific affinity between those organs and themselves (as cubebs stimulate the kidney), but excite their actions indirectly, evolving for their use, from the elements of the blood, a larger proportion of that which it is their normal function to eliminate." Of those remedies which, on the contrary, retard

these changes in the blood, little is known. Dr. Böerker found in his careful experiments that the effete products of the body diminished under the use of wine, sugar, and coffee, and it is probable that tonics act by opposing destructive changes in the bloods.

Another point of practical interest, in respect to which however we have but the merest hint, is the detention in the blood of some *materies morbi*, which requires for its excretion to combine with some other definite material. Several years since, Dr. Bence Jones remarked the striking deficiency of phosphates in the urine of persons suffering delirium tremens. A case of this disease came under the observation of Heller, in which lime-water happened to be given as the remedy; he observed the fixed salts of the urine rise immediately from 4.60 per 1000 to 13.2, the phosphate of lime having increased nearly eight-fold while the extractive matters fell from 22.66 to 10.1. "In considering this case," remarks Mr. Simon, "it is difficult to avoid the conviction that the lime supplied a condition, which was previously absent, for the elimination, perhaps even for the formation, of other ingredients, and that the deficiency of phosphates must have been accidental, and secondary to that absent condition which the lime-water supplied." Without attaching too much importance to this particular instance, it indicates the direction for future inquiry into the operation of other remedies and into the means for treating humoral diseases.

Mr. Simon is no believer in the *parasite-theory* of Dr. Holland, or the *fermentation-theory* of Liebig, as explaining the nature or action of *morbid poisons*. He considers their phenomena *sui generis*, although chemical. Probably they belong to that class of chemical actions called Catalytic; but even in this case, they constitute a new species. But what is that constituent of the human blood, out of which the diseases of animal infection are capable of being developed? Not the blood corpuscles or the albumen, for these ingredients of the blood are so essential to life, that their temporary transformation would be fatal; neither do they show any alteration after death by zymotic diseases: and finally, one attack of any particular disease would never confer immunity, if to this end it were necessary that these materials should be exhausted. The same line of argument would exclude the salts. We have now only the fibrin and extractive matters left of the sensible constituents of the blood, and it is precisely these which, representing the "waste of the tissues," Mr. Simon is disposed to regard as affording the materials for the action of the several morbid poisons. This theory is founded, of course, on the

view formerly taken of the effete nature of fibrin, and the following is his reasoning on this subject, which, at the least, has the merit of ingenuity:—

“In the first place, they are matters already in progress of decay, and therefore eminently susceptible of new modification; in the second place, they are inessential to the nutritive processes, and that removal of them from the system, which would give immunity from re-infection, might be accomplished without withdrawing a vital ingredient from the blood: in the third place, only of such matters as these can it be said, that some of them occur but once in life. In infancy, in early age, and till puberty, there are certain waste materials, which never afterwards occur; the temporary cartilages have to waste away, the thymus gland has to decay, peculiar changes referable to the sexual system have to be accomplished, and the effete products of these changes have to be eliminated from the system. And fourthly, notice that the surfaces and organs most prone to affection in the diseases under consideration, are those which are eliminative and defecating; those whose normal products can hardly be retained for any time within the body, much less out of it, without undergoing a fetid decomposition, which sufficiently stamps them with an excrementitious character. Bowels, skin, kidney, tonsils, are the favorite resorts of the several fever-poisons, just as they are the surfaces by which, naturally, the organic waste of the several tissues is eliminated.”

“On inquiry, it might appear that the relations of infective material to these natural products are definite and constant; that one—let us, for instance, say syphilis—would stand in the particular relation to fibrin; it would be obvious that such an one would be of almost universal inoculativeness, and could only for a very short time, if at all, exhaust the patient's susceptibility to re-infection; and that a drug having certain relations to fibrin (mercury, for example) would interfere with the affinities established by the disease. It might appear that another material, having its origin in the organic waste of nervous substance, would constitute the liability—say to typhus; such an origin would almost fix the circumstances increasing our proneness to that disease, as well as prefigure the symptoms attending it. Of another material, it might appear that it originates in the infantile decay of temporary cartilage, or of thymus, a decay occurring only once in life; that such material would constitute the susceptibility to measles or whooping-cough, a single attack of which commonly exhausts the patient's susceptibility for ever. Of a fourth material, it might appear that it arises in those changes of blood which attend the inflammatory and reparative processes, under direct atmospheric influence (as in open wounds, cutaneous or mucous), and that in such a product would consist the humoral liability to erysipelatous infection and to puerperal fever.”

We need hardly add, that these examples are not intended as

pictures of what actually occurs, but only as illustrations of the author's meaning.

The principles of treatment deducible from this analysis of the pathology of morbid poisons, were mainly stated in the preceding lecture. It is important, however, to add, that since in the present state of our knowledge, we are unable too often to meet the true indications; "to check the further conversion of material in the blood, to destroy the poison, or to turn it into harmless combinations; to aid or to anticipate the eliminative efforts of the disease;" our efforts should be to moderate local phenomena and sustain the system. "Till you can neutralize the poison of typhus, of erysipelas, of scarlatina, within the blood of your patients, as you would neutralize an acid, or an alkali in a test-tube, never lose sight of this important principle; never forget that these morbid poisons are eminently depressive to life, that they tend to kill by shock and debilitation."

Mr. Simon premised in his introductory lecture, that the results of pathological investigation, so far as they relate to Therapeutics, were as yet of a *negative* kind. That Pathology has taught us what we could not do, and served to dispel many illusions in regard to the supposed efficacy of certain remedies in certain diseases. The perusal of his work, if we were to adopt his reasoning and conclusions, would painfully convince us of the truth of this assertion. Such conclusions may be satisfactory to the scientific man, but they are most disheartening to the practitioner. Already conscious of the weakness of the instruments of his warfare, he casts about him for others more efficient. He seeks from Pathology *affirmatives*, but it teaches only *negatives*, and in effect disarms him of the weapons on which he has long trustingly, but perhaps vainly, relied. But our author looks hopefully forward to the future career of pathological science, and so do we. Aided by the microscope and organic chemistry, we doubt not that it is destined to revolutionize our system of Therapeutics, by establishing a "specific treatment of each diathesis, founded on an exact knowledge of the physiological laws of its manifestations." If hitherto its efforts have been expended in the demolition of favorite theories and cherished opinions, it is that it may remove the rubbish which "blundering quackery" has been for centuries accumulating, and lay broadly and deeply the foundation on which it is commissioned to rear the beautiful temple of RATIONAL MEDICINE.

S. S.

BIBLIOGRAPHICAL NOTICES.

ART. VII.—*A System of Operative Surgery; based upon the practice of Surgeons in the United States, and comprising a Bibliographical Index and Historical Record of many of their Operations, during a period of two hundred years.* By HENRY H. SMITH, M. D., Surgeon to the St. Joseph's Hospital; Assistant Lecturer on Demonstrative Surgery in the University of Pennsylvania, etc., etc. Illustrated by numerous Steel Plates. Philadelphia: Lippincott, Grambo & Co. 1852. 8vo., pp. 698, with 80 colored plates.

IN the eighth volume of the new series of this Journal we called the attention of our readers to the first two parts of this work. It was there said that this belongs to a class of works much needed in our medical literature. In this opinion we have become more and more confirmed by the time which has elapsed and the opportunity which has been afforded us to examine other portions of the work. Dr. Smith has rendered the profession at least signal service in the preparation of it—that he might have rendered still more signal service by consulting still other portions of our literature than those he has evidently consulted, we firmly believe. There are important operations and even capital operations, which have been performed by American surgeons a long time previous to the commencement of the present century which have, from their importance and results, gained admission into foreign publications and the operators an European reputation, which deserve and ought to have received notice somewhere in this volume. But it is not our desire to complain of omissions, especially when there is reason to believe that the fault lies not in the intent so much as in the somewhat limited sources from whence our author's information has been derived. And while alluding to this we cannot refrain from observing that repeated instances do occur in the "bibliographical index," in which justice has not always been done in giving credit to the *original* authorities, in which cases and papers have first appeared. In justice to all parties this ought to have been done. But to return to our notice.

This truly handsome volume, which is deservedly dedicated to Prof. Charles Pope, of the Med. Dep. of St. Louis University, is divided in its arrangement of subjects into five parts. 1st. *General duties and Elementary Operations*; 2d. *Operations on the Head and Face*; 3d. *Operations practised on the Neck and Trunk*; 4th. *Operations on the Genito-Urinary organs and Rectum*; and 5th. *Operations on the Extremities*.

The first part opens with an introduction, containing some excellent observations on the importance of an operator possessing other qualifications than those of manual dexterity, and in which he insists upon the fact, that in order to be an excellent surgeon he must also, necessarily, be a good physician. The remaining portion of this part is divided into four chapters: viz., general duties of an operator; elementary operations; means of arresting hemorrhage; and duties of a surgeon immediately after an operation.

The second part is divided into thirteen chapters, which embrace surgical anatomy of the head; operations upon the head; operations on the face; operations on the appendages of the eye; operations on the eyeball; operations on the humors of the eye; plastic operations on the face; of the external nose; of the internal nose; of the mouth; operations practised within the mouth; resections of the bones of the face; and operations practised upon the ear.

The third part is divided into twenty chapters, which embraces a very interesting and important part of the volume. In it are treated the surgical anatomy of the neck; operations practised on the portion of the neck above the os hyoides; operations performed on the larynx and trachea; operations on the pharynx and œsophagus; operations for the relief of deformities of the neck; tumors of the neck; aneurisms in general; aneurism of the carotid arteries; ligature of the innominate and subclavian arteries; operations upon the chest; operations on the mammary gland of the female; operations on the walls of the thorax; operations upon the abdomen; wounds in the abdomen; hernia in general; strangulated inguinal hernia; strangulated femoral hernia; umbilical hernia: artificial anus; ligature of the iliac arteries; and operations practised on the back.

The fourth part is composed of seven chapters: viz., operations on the male genito-urinary organs; stone in the bladder; lithotripsy, or crushing of stone in the bladder; operation on the female genito-urinary organs; operations for vaginal fistula; operations practised on deep-seated organs of the female; and operations practised on the rectum.

The fifth part is composed of eight chapters. This part has evidently not that completeness or extent of research that is evinced in the former, and we think shows marks of more haste in its preparation. It is divided into general operations on the extremities; ligature of the arteries of the upper extremity; ligature of the arteries of the lower extremity; operation on the bones of the upper extremity; operation on the bones of the lower extremity; general remarks on

amputations; amputations of the upper extremity; and lastly, amputations of the lower extremity.

Thus we see that the field of discussion and the opportunities for research have been ample, and we are pleased to say that on some subjects our author has left but little to be desired. To this class belong operations for aneurism of arteries, hernia, and ovariectomy. Not so, however, with operations upon the external genital organs of females, operations upon the uterus, particularly polypus operations for extra-uterine fœtation, tenotomy and myotomy; amputation through large joints, &c., &c. Some of these subjects are of great importance, and should, we think, have received more attention in a system of operative surgery. We are led to believe, however, notwithstanding these and some other defects, that the work fills a desideratum in our home literature of surgery, and must necessarily occupy a favorable position both at home and abroad. Its design is unique—the execution evinces a good degree of talent, and a perseverance and industry truly commendable; and we look upon this labor of Dr. Smith as deserving of praise. The typographical and artistical execution is all that the most fastidious could desire; and both artist and publishers have thereby established a reputation equal to any in the country. We commend the volume to the favorable attention of our readers, with the earnest assurance that it is the only work extant which is particularly based upon the practice of some American surgeons and the contents of some *Medical Journals*.

ART. VIII.—*Operative Surgery Illustrated; containing more than Nineteen Hundred Engravings; including Two Hundred Original and Fifty Colored Drawings. With Explanatory Text.* By R. U. PIPER, M. D. Also a chapter upon the use of Ether in Surgery, from the Transactions of the American Medical Association; written at the request of a Surgical Committee of that body. By HENRY J. BIGELOW, M. D., Professor of Surgery in the Medical School of Harvard University. Boston: Ticknor, Reid & Fields. 1852. 8vo., pp. 384.

THE title above given explains sufficiently full the intention of the author in the preparation of this volume. The woodcut illustrations are principally copies from illustrated works already published. In the selection of illustrations, Dr. P. seems to have been guided by an utilitarian spirit—such as would render his work most useful to the surgeon. The text relates almost entirely to a description of

the plates; and with the exception of the chapter on the "Use of Ether in Surgery," the volume is strictly what its title purports, *Operative Surgery Illustrated*. The artistical execution of the engravings speaks tolerably well for Dr. Piper as an artist, although the work itself adds but little to our existing stock of knowledge.

ART. IX.—*A Practical Treatise on Diseases of the Skin*. By J. MOORE NELIGAN, M. D., M. R. I. A., Lecturer on Practice of Medicine in the Dublin School of Medicine, etc. Philadelphia: Blanchard & Lea. 1852. 12mo., pp. 333.

WE need hardly say that this work is the effort of a practical physician, and should command the attention of the profession. It comes to us as the result of a special attention given to this branch of pathology extending through a period of several years. It is written in a terse style, and contains a good account of the modern improvements in this department of medicine. We augur a good reception by the profession.

ART. X.—*Sketches of Brazil; including New Views of Tropical and European Fever; with Remarks on a Premature Decay of the System incident to Europeans on their return from Hot Climates*. By ROBERT DUNDAS, M. D., Physician to the Northern Hospital, Liverpool; formerly Acting Surgeon to H. M. 60th Regiment, etc., etc. London: John Churchill. 1852. Crown 8vo., pp. 449.

THIS interesting, and in many respects clever volume, claims more attention than the circumstances in which we are placed at present will allow us to devote to it. The medical sketches of Brazil occupy but a small portion of it, the greater portion of the volume being occupied with the discussion of the causes of intermittents, the identical character of fevers of both hot and cold climates, and the use of quinine in the treatment of not only fevers generally considered of malarious origin, but fevers in general of temperate as well as hot climates.

The following extract taken from the body of the work, will convey to our readers a condensed view of the object of the author's argument:

"It is, indeed, more than probable, that fever is the expression of a type of disease essentially one and uniform, but admitting of an endless variety of forms; the simplest being displayed in the single paroxysm of an ague. It is further more obvious on the most cursory observation, that the description of fever as a disease has,

in the generality of instances, been drawn from certain localities, and not from the whole group of febrile diseases as witnessed in different parts of the world. The typhus fever of this country is superseded by the bilious, remittent and intermittent, in southern climates—by the plague in the Levant—and by the yellow fever within the tropics. Each of these maladies, under the special influence of climate, temperature, different modes of living, and numerous agencies, effect certain peculiarities in its progress, but they are all distinctly impressed by the phenomena universally characteristic of fever as a genus of disease in every clime."

That portion of the volume which will be read with most interest, is that relating to the treatment of fevers with large doses of quinine. One of the important arguments which Dr. Dundas uses in favor of the identity of all fevers of all climates, is, that they are all equally curable by quinine. The cases which he adduces in proof of this innovation in practice, are striking, and are not confined to his own practice. Drs. Scott, Goolden, Mr. Eddowes and Mr. Hine, &c., have each related cases confirmatory of such practice. And in our own country the experience of Dr. E. D. Fenner, of New Orleans, may be said to furnish an additional argument in favor of such views. In the treatment of continued fever, Dr. D. uses quinine in doses of ten to twelve grains every two hours till the disease is arrested. The quinine is to be suspended if the urgent symptoms persist, and after seven or eight hours, small doses of tartar emetic should be given, and repeated until full vomiting ensue. For twenty-four hours then the patient should be allowed to rest, after which the quinine should be re-administered. By this treatment "in the vast majority of cases of *uncomplicated* typhus, taken at the commencement, you may calculate on complete and rapid success; and in all, you will almost invariably succeed in breaking, for a time, the diseased chain of actions—no unimportant advantage in any malady." Dr. Dundas believes that "the immediate arrest of typhus by quinine will, for obvious reasons, be more signally displayed in private patients, than in the ordinary run of those admitted into hospitals.

ART. XI.—*Examinations of Drugs, Medicines, Chemicals, &c., as to their Purity and Adulterations.* By C. H. PIERCE, M. D., Examiner of Medicines, &c., for the Port of Boston. Cambridge: John Bartlett. 1852. 12mo., pp. 264.

THIS volume must prove to the country physician and city druggist a valuable and useful publication. As a practical work it is deserving their attention.

ART XII.—*Clinical Reports on Continued Fever, Based on Analysis of one hundred and sixty four cases; with Remarks on the Management of continued Fever; the Identity of Typhus and Typhoid Fever, Relapsing Fever, Diagnosis, &c.* To which is added a Memoir on the Transportation and diffusion by contagion of Typhoid Fever, as explained by the occurrence of the disease at North Boston, Erie county, N. Y. By AUSTIN FLINT, M. D., Prof. of the Principles and Practice of Medicine and of Clinical Medicine in the University of Buffalo, and Editor of the Buffalo Medical Journal, etc. etc. Buffalo: Geo. H. Derby & Co. New-York, G. P. Putnam. 1852. 8vo. pp. 390.

THIS volume we look upon as one of the most important contributions to clinical medicine that has been offered to the profession of this country for a long time. The toil and labor bestowed upon it, and the important result arrived at, command our admiration and praise. The author of these reports undertook the preparation of the materials which compose them with an eye directed mainly to the subject of the identity or non-identity of typhus and typhoid fever. The result arrived at is contrary to the opinion entertained by him previous to the commencement of the undertaking. A strong advocate of the opinion of the identity of the two forms of fever, he stood firm in his belief of the truth of the doctrine, which the compilation of these reports has completely overthrown. The result obtained from carefully prepared records of one hundred and sixty-four cases, has completely changed his mind, and he now declares his conviction of the non-identity or distinctive character of these two varieties of fever. We wish that our space would admit of a short analysis of the views contained in this interesting volume, but we must defer this for some future occasion. We most heartily commend these reports to the careful and candid attention of our readers.

ART XIII.—*Illustrated Manual of Operative Surgery and Surgical Anatomy.* By M. M. CL. BERNARD, D. M. P., and CH. HUETTE. Edited, with Notes and Additions, by WM. H. VAN BUREN, M. D., and C. E. ISAACS, M. D. Illustrated with steel engravings from drawings after nature, by M. J. Lèveillé. Designed to serve as a companion to the ordinary text-books of Surgery. New-York and London. H. Bailliere. 1852. Part 2, 8vo., pp. 120, with 27 colored plates.

SOME time since attention was called to the first part of this beautiful work. The second part, which is now issued, is occupied with the subjects of amputations, exsections, operations upon the head, eye, ear, throat and face. The concise and perfect picture here offered of the

operations usually performed upon these parts, is such as to command the admiration and praise of every surgeon. The execution of this part is in perfect keeping with that of the first, and must tend to increase greatly the reputation of the publication. No surgeon's library can lay claim to completeness without it contains a copy of this work. By a notice in this part we perceive that arrangements are being made for the "speedy completion of the work."

ART. XIV.—*The Physician's Visiting List, Diary and Book of Engagements.* For 1853. Philadelphia: Lindsay & Blakiston.

THIS is an exceedingly useful work; one which, for convenience and time-saving, should be in the hands of every physician. It is published annually, and may be found at any of our medical bookstores.

ART. XV.—*Transactions of State Medical Societies.*

WE have received the transactions of the following State Medical Societies, containing several highly valuable reports and original communications. On future occasions, as circumstances will permit, the pages of the Journal shall contain an abstract of at least a portion of them: *Transactions of the Medical Association of the State of Missouri*, at its second Annual Meeting, St. Louis, April, 1852; *Transactions of the third Annual Meeting of the Medical Society of the State of Georgia*, held in the city of Augusta, April, 1852; *Transactions of the Medical Society of the State of Pennsylvania*, at its Annual Session, held in the city of Philadelphia, May, 1852; *Transactions of the twenty-ninth Annual Meeting of the Medical Society of Virginia*, held in the city of Richmond, April, 1852; *Transactions of the Illinois State Medical Society*, for the year 1852.

The growing interest felt in the organization and maintenance of State Medical Societies, follows as the legitimate fruit of the organization of the American Medical Association. We have faith in the present good and ultimate great value of such organizations, and hail them as the omens of the great self-preserving and ever-living vital character of our profession.

PART THIRD.

FOREIGN MEDICAL RETROSPECT.

PHYSIOLOGY.

On the Final Cause of Menstruation. By DR. F.^rH. RAMSBOTHAM.
—If it is really the case, of which there seems to be no doubt, that at each menstrual period in the human female the fimbriated extremity of one or both of the Fallopian tubes embraces an ovarium, and causes a Graafian vesicle to burst and shed its contents into the canal, it would naturally be inferred that the formation of this fluid is subservient to the departure of the ovule from its ovarian bed, and designed to perform some important function in relation to its escape. Now, it would appear probable that the function is identical with the nutrition of the young ovum, and that the menstrual discharge, indeed, is nothing else than the rudiments of the deciduous membrane itself; or rather that it would have become the deciduous membrane, provided conception had occurred. And I think the identity of these two products is established by the following considerations.

An ovule ripe for impregnation, parts from the nest in which it had been elaborated, being conveyed by the grasp of the Fallopian fimbriæ. At the same time, Nature establishes an action for the purpose of preserving it, provided an opportunity of becoming impregnated by contact with the male semen is afforded it. Should that contact take place, and conception follow, the fluid formed is retained within the uterus, and is gradually converted into the deciduous membrane, which becomes the first medium of communication between the newly animated ovum and the maternal vessels. If, on the contrary, conception does not happen, the ovule perishes, and the fluid secreted for its advantage, not being required, is allowed to exude externally, as a superabundant and useless secretion.

This supposition, indeed, would require us to believe that the ovule may be impregnated, as well in the Fallopian tube, after its escape from the ovarium, as in the ovarium bed itself; and I can discover no difficulty in believing that such should be the case. In the genus aves, for example, the eggs are impregnated after they

have escaped from the ovarium, and in that of pisces the same takes place, not only after they have parted from the ovarium, but even after they have been expelled from the body of the parent altogether; so also in some amphibia, as in frogs.

The variation in regard to the time that elapses between conception and the commencement of labor, observable not only in different women, but also in the same woman on different occasions, may perhaps be accounted for by the part of the Fallopian tube at which the ovule becomes impregnated; the nearer to the uterus the ovum was, the shorter the time probably that would elapse before it arrived at the uterine cavity; the nearer to the fimbriæ, the longer would be the time, because it would have a larger portion of the Fallopian tube to traverse. The period of utero-gestation, properly so called, that is, the length of time the ovum remains within the uterine cavity, is, in my estimation, definite; while the time of transit through the tube varies considerably, after impregnation has been effected; and this variation will be sufficient to explain the difference above alluded to.

The view which I have taken of this question is strengthened by the facts, that the menstuous fluid and the decidual membrane seem both to be formed by the same tubular glands lately discovered in the uterine substance—that the decidua when first formed is of the consistence of a viscid fluid—that in dysmenorrhœa a membrane is not unfrequently formed within the virgin uterus, which has very much the external characters of the decidua, and indeed can sometimes scarcely be distinguished from that membrane, the result of impregnation—that those females who menstruate irregularly or painfully, are not so obnoxious to pregnancy as those in whom the function is normally performed—that the catamenia will sometimes appear once soon after impregnation, as though more fluid had been afforded than was required for the purposes intended—and especially that, as in the lower animals no deciduous membrane is formed, therefore there is no necessity for any menstrual secretion; and we know that woman is the only animal subject to this peculiarity.

The position, then, deducible from the foregoing observations is, not only that whenever impregnation occurs, a secretion is elaborated by the uterus for the purpose of affording nourishment to the ovum, but that, independently of conception taking place, an ovule, even in the virgin, passes periodically from the ovarium into the Fallopian tube, and at the same time, the same provision is made by Nature for its preservation, in anticipation of its becoming vivified; but that if this vivification is not effected, the fluid formed flows away, is cast off, indeed, as effete matter, and is what we properly call the menstuous discharge.

The periodical return of the discharge cannot be considered as militating against this theory, but rather as supporting it; not only because we have constantly before our eyes instances of functions in the body performed with periodical exactness, but also because we know that in those of our graminivora which bring forth but once annually.

the season of conception is so determined that the young should be produced in the spring. Thus the mare and the ass, whose period of gestation is eleven calendar months, conceive almost immediately after parturition—the mare on the ninth day after, the ass on the seventh—to the evident intent that a new progeny may be reared in the summer months. The cow, whose period is nine months, does not, however, conceive till three months after her last birth. The sheep and goat, which carry their young five months, will not take the male till the end of autumn; and the hare, whose term is only thirty days, does not become impregnated until eleven months have passed since the last parturition. This extreme variation in these different races of animals is evidently instituted with one single object—namely, that the young may be produced into the world at that season of the year most favorable for their nurture. And if Nature has been so precise in regard to the lower animals, we cannot wonder that she has displayed an adherence to a similar system in the case of the females of our own species, or that there should exist in the human subject the same kind of periodicity in regard to the perfection and escape of the ovule from the ovarium.

Nor can the waste which such a frequent loss of the ovule must entail on Nature, be regarded as an objection, since we see, as well in the animal as in the vegetable kingdom, loss to an enormous amount, exactly of the same description, constantly going on. How few seeds, comparatively, even after fecundation, become productive. and what a whole destruction of organic life is there not witnessed in the case of fishes. Of the million, or the million and a half of ova expelled from the ovarium of the sturgeon, for instance, how few are fecundated, and how few of those that are fecundated survive to be elevated into the existence of a living independent animal. If Nature permits such a waste to be inflicted on her, in the reproduction of one genus of animals, we cannot surely find difficulty in believing that the same prodigality (so to speak) may, in a minor degree, influence her operations in the human subject.”—*Braithwaite's Retrospect*.

PATHOLOGY AND PRACTICAL MEDICINE.

On the Use of Gutta Percha in the Treatment of Diseases of the Skin. By ROBERT GRAVES, M. D.—“It is scarcely necessary to add that, however useful solution of gutta percha in chloroform, or any other topical applications, may prove, it would be, nevertheless, absurd to expect from them a radical cure of those chronic cutaneous affections which arise from constitutional causes, whether strumous, syphilitic, or canceroid; as well might we look for the cure of scarlet fever, small-pox, or measles, by means of remedies applied to the skin solely with the view of relieving the eruption. Still, in every chronic disease it is manifestly desirable to diminish, by topical means, the annoyance or disfigurement arising from the cutaneous affection. This relief cannot but be serviceable if it did nothing else than afford

time for the due and gradual employment of a well-directed constitutional treatment. I saw this lately well exemplified in the case of a young lady who had been under the care of an eminent London surgeon for many months, and from whose medicines she had derived no relief. She was the subject of a most disfiguring eruption, agreeing in character with the lupus serpiginosus of late writers; it occupied sparsely the nostrils and cheeks, but on the forehead it formed an extensive group of sores. Some spots it left hypertrophied after healing, but in general its course was marked by white depressed seams. It had been the seat of constant irritation, which the patient could not avoid increasing by scratching during sleep, and consequently the surface of the face usually exhibited a number of bloody points, adding to its disagreeable appearance. The entire eruption healed after a six weeks' application of the gutta percha, and she is now (what she had not been for two years) free from any cutaneous irritation. Time alone can determine whether relief will be permanent, but there can be no doubt of the great value of the advantage already gained.

I shall conclude with observing that, in psoriasis and other chronic cutaneous complaints unattended with any constitutional derangement, it is of the greatest consequence to check the growth of each new spot. This the gutta percha does most effectually in psoriasis, and when applied daily to any recent points of irritation, it smothers, as it were, each nascent centre of future blotches."—*Dublin Quar. of Journal Medicine.*

On Bright's Disease, and its Connection with Puerperal Convulsions. By DR. LITZMANN, (*Deutsche Klinik.*)—Professor Litzmann, of Kiel, has published an elaborate memoir on renal disorder in pregnant and puerperal females. He commences by describing twelve cases in which albuminuria and œdema were present; some of the women had convulsions. Three of the patients were pregnant with twins; and nine (including the twin cases) were primiparæ.

In several of the cases, especially where convulsions were present, or were threatened, or where there were symptoms of toxæmia, as amaurosis, etc., carbonate of ammonia was discovered in the blood and in the air expired from the lungs, and in the blood of the children who were born dead. This was in accordance with the view of Dr. Frerichs, that urea, when accumulated in the blood, becomes converted into carbonate of ammonia, and then produces toxæmic symptoms.

Including the twelve cases described, Dr. Litzmann has examined the urine of 131 persons; 79 during pregnancy, 80 during labor, and 80 after parturition. In these he has found albumen present in 37, and absent in 95. The examinations began, with few exceptions, in the last three months of pregnancy; in almost all cases they were repeated several times, and in several daily; yet it is possible that small quantities of albumen may have escaped notice. In order to avoid the admixture of foreign matters from the vagina, the catheter

was used, always with parturient women and those who had been delivered, and frequently in pregnant females. In the latter, as well as in those who had been confined, the urine passed in the morning was employed. Heat, and acetic, or nitric acid, were the tests used.

Of the 95 females, whose urine contained no albumen, 53 were primiparæ and 42 multiparæ. Of the 37, who had albuminuria, 26 were primiparæ and 11 multiparæ; among the latter was one who had albuminuria in her first pregnancy, and two who were pregnant with twins.

Among the 37 females, the urine of 16 was discovered to be albuminous during pregnancy. In ten of these the albuminuria continued during labor, and for some days afterwards; in four, where it was less intense, it disappeared before confinement; and in two cases, circumstances prevented the examination from being continued.

In four women who had been confined, and whose urine contained albumen, no examination had been made during pregnancy. There can be no doubt, however, from the quantity of albumen found, and the other symptoms, that it had been present.

In four females, in whose urine no albumen had been found during pregnancy, albuminuria appeared during labor—in two evidently for the first time.

In ten persons, in whose urine no albumen had been present during pregnancy, there was considerable albuminuria after delivery. In eight of these, the urine, examined during labor, was found to contain no albumen.

In three females who had been confined, and in whose urine albumen was found, no previous examination had been made.

There is a form of albuminuria unconnected with renal disease, but arising from catarrhal irritation or blennorrhœa of the bladder. Dr. Litzmann has observed it twice during pregnancy, several times during labor, but most frequently after delivery. It generally appears on the second or third day, and goes on increasing till the sixth or seventh. The quantity of albumen is not great, and is connected with the presence of purulent mucus. At first, the urine after delivery is high-colored, of acid reaction, and contains a large quantity of urates and uric acid, with epithelium and a number of pus or mucous globules. It afterwards becomes lighter and yellow in color, slightly turbid, contains less urates, and is less acid; on long standing, it deposits a sediment of pus corpuscles with more or less epithelium. Fibrinous casts of the uriniferous tubes are never present. In only two cases was the quantity of pus in the urine sufficient to be detected by the naked eye: these were more chronic than most of the others, recovery not being effected till the eighth week.

In both these cases, which Dr. Litzmann relates, there had been, during labor, long continued pressure on the urethra and neck of the bladder; and this may have acted as the proximate cause of the disease. Yet cases very often occur, in which the same causes do not produce such effects. In most of the women affected with vesical catarrh after delivery, the disease could not be attributed to the above

cause, the labors having been regular, and even easy. Dr. Litzmann is inclined to believe that slight vesical catarrh, which may not cause albumen to be present in the urine, but which may furnish a sufficient quantity of pus or mucous corpuscles to be detected with the microscope, is of not unfrequent occurrence after delivery. During and before labor the disorder is much more rare. When it occurred during labor, this had almost always been tedious, without, however, in general producing retention of urine. One of the pregnant females who were affected had rigors, and was at the same time seized with rheumatic swelling of the hands. In another, the vesical catarrh was brought on in the fourth month of pregnancy, by retroversion of the uterus. The local symptoms were generally very slight; on being questioned, the patients would acknowledge a little uneasiness or sense of heat in the bladder; but the state of the urine was generally the only diagnostic symptom. Of the 37 cases of albuminuria which Dr. Litzmann observed, he believes that half were referrible to catarrh of the bladder: this he ascertained in nine of the cases, by microscopic examination.

Simple albuminuria, and Bright's disease, (albuminuria accompanied by fibrinous exudation into the uriniferous tubes), pass gradually into each other in pregnant females. In most of the cases in which albuminuria had reached a high degree, fibrinous casts were found towards the end of pregnancy, or during labor and the early part of the subsequent period. Of the 37 cases of albuminuria, Dr. Litzmann found 13 to be connected with Bright's disease: in 7. fibrinous casts were found: in one, the urine could only be examined once, and, though not then found, they were probably present; and in five, there could be little doubt from the quantity of albumen and the concomitant symptoms—eclampsia in three cases—that they were present, although the urine was not examined microscopically.

There can be no doubt that, as has already been pointed out by Rayer, the albuminuria of pregnant females arises from a mechanical obstruction to the renal circulation. From the experiments of Frerichs, it appears that the retardation of the venous circulation on the kidneys easily produces exudation of albumen and fibrin, and finally, even of blood. On the other hand, increased arterial impulse, as from ligature of the aorta below the renal arteries, only rarely gives rise to slight albuminuria; and it is when one kidney is extirpated at the same time with the ligature of the aorta, that any notable quantity of albumen appears in the urine. In favor of the mechanical view of the explanation of albuminuria in pregnant women, may be adduced its predominance in primiparæ—a fact recognized by all observers. The tight and unyielding abdominal wall must naturally cause the uterus to press more strongly on the organs lying behind and above it. It is moreover probable, that when albuminuria has occurred in multiparæ, it has been but a repetition of the same affection which they had as primiparæ.

In many of the cases, there were also other causes which tended to increase the pressure. Five of Dr. Litzmann's patients, who had

albuminuria, were pregnant with twins; in others, there was a large quantity of liquor amnii, or a large child, or both; in one case, there were periodical contractions of the muscles, especially of the recti, pressing the uterus against the spinal column; in four cases, the pelvis was narrow. Three of the patients had chronic pulmonary catarrh. It cannot, however, be denied, that cases are often met with, in which all these circumstances are present without producing albuminuria; and, on the other hand, that albuminuria sometimes occurs, even in a high degree, without more than ordinary pressure being apparently exerted. An additional ground for assuming the dependence of albuminuria in pregnant women on mechanical impediment to the circulation, is found in the rapidity with which it disappears as soon as, by emptying the uterus, the free circulation of the blood has been re-established.

Besides the mechanical cause, we must take into account the state of the blood in pregnant women (increase of water and fibrin, decrease of albumen, diminution of the red, and increase of the colorless particles). Most of the pregnant women with albuminuria, observed by Dr. Litzmann, had a more or less chlorotic appearance: while others appeared fresh and healthy. The state of the blood did not appear sufficient to cause albuminuria, without an impediment to the circulation through the kidneys. In common with Lever, Devilliers and Regnault, etc., Dr. Litzmann has not been able to recognize cold or the abuse of spirituous liquors, etc., as the cause of albuminuria in pregnant females.—*Lond. Jour. Med.*

Treatment of Typhus Fever by Sulphate of Quina. By D. McEVERS.—Since the first introduction into Europe of the Jesuits' bark in 1649, the most celebrated writers extolled its efficacy in the treatment of various diseases, but especially in fevers; owing, however, to some cause or other, it fell into disuse; and it is probable that this was occasioned by the many failures which attended its administration; failures which I now feel assured were owing principally to two causes:—first, the bark not having been given in sufficiently large doses; and, secondly, the bark not having been always of the genuine kind. Its use was revived by the celebrated Sydenham, and after the time of that eminent man, its excellent qualities were fully established by Hoffman, De Haen, Pringle, Clegghorn, and other practitioners of eminence. And it is worthy of remark, that those who were most enthusiastic in praise of this remedy gave it in very large doses. Dr. Clarke, a celebrated physician, who wrote on fever in the year 1770, was in the habit of prescribing bark in two-drachm doses every two hours, and at the same time of exhibiting it by the rectum in the form of enema; he relates that on one occasion, in mixing a dose of bark for a patient, he discovered that the apothecary had by mistake put half an ounce of bark into each paper instead of two drachms, which he had ordered; the patient had been taking this large dose for a considerable time, and got cured of a bad typhus in consequence. Now, when it is estimated that two pounds of good

bark will yield about two hundred grains of sulphate of quini, it must be admitted that Dr. Clarke's treatment of typhus was not far short of the heroic method of the present day introduced by Dr. Dundas. It is unnecessary to advert to the fact that Dr. Clarke's patients were taking a different preparation, possessing, however, the same active base.

One great objection to its general use in this country, which may be advanced, is the high price of the salt; but should the remedy be found as efficacious in the practice of others as by Dr. Dundas and myself, I feel assured that its use, when applicable, would eventually constitute the true economy of our fever hospitals.

I have placed these cases and observations together in a very hurried and, therefore, imperfect manner, but the subject I considered to be of so much importance to the profession, as to induce me to take advantage of the earliest opportunity of bringing forward the results of my experience of this new treatment for typhus; and I do so in the hope, that this notice of the subject, however imperfect, may induce others to test the value of quina in this disease, in the large doses recommended.—*Edinb. Med. and Surg. Jour.*

On the Treatment of Puerperal Convulsions during Labor at the Full Period. By Dr. DUCLOS and J. BOUTELLER, JR. (*Archives Générales de Médecine.*)—It is not always proper to attempt to hasten delivery. When there is excessive irritability of the uterus, and the head is far advanced, we may wait for its expulsion; but, if the convulsions are very violent, the forceps may be applied. If, on the other hand, the os is but little dilated, opiate enemata and moderate blood-letting are indicated; and, if these do not succeed, turning is the last resource.

When the labor is tedious, without absolute inertia of the uterus, but with feeble irregular pains, and convulsions, we should ascertain that there is sufficient dilatation to permit the use of the forceps, or turning, if necessary. Ergot may then be given; and, if delivery is not effected in half an hour, turning or the forceps may be used, the former being preferable.

In convulsions connected with tedious labor from deformed pelvis, from narrowing of the vagina or vulva, from disease of the neck of the uterus, or from unusual hardness of the membranes, each of these conditions must be met by its appropriate local treatment. When the waters are over abundant, the membranes must be ruptured.

In cases of excessive distension from the presence of twins, turning cannot be employed as a general rule; and the forceps can only be used under certain circumstances, as when the head of one child has passed the brim. Belladonna should be rubbed into the cervix, and the membranes ruptured; slow dilatation of the os by the fingers might render the convulsions more frequent. Ergot ought not to be given.

When a tumor coexists with labor at the full term (happily a

rare case), the treatment must be conducted on the same principles as are pointed out in cases of contracted pelvis.

When the fœtus is very large, and the os well dilated, but labor does not progress, and convulsions arise, the forceps should be employed; as also when, after the head has escaped from the uterus, there is laceration or extreme irritability of the external genital organs, producing convulsions. Rupture of the uterus must be treated according to the rules laid down in obstetrical works.

Distention of the bladder must be relieved by the catheter; of the rectum, by enemata.

Uterine hemorrhage producing convulsions must be treated according to the usual rules; mental emotions producing convulsions are an indication for prompt delivery.

Blood-letting, either from the arm, or by the application of leeches to the mastoid region and neck, is useful in certain cases; but is contra-indicated in choleric subjects, exhausted by hemorrhage, or worn out by gestation. Serous infiltration, connected with albuminuria, and not confined to the lower extremities, is a contra-indication. This remedy acts, the authors believe, by calming the nervous system; and they advise it as an antispasmodic. Enemata are also useful, by unloading the intestines of fecal matter. Derivatives and cutaneous revulsives are useless, or even mischievous. Antispasmodics often produce, if not a cure, at least some improvement; they should be administered either in fomentation, in injections, or by inhalation. Draughts, pills, and powders, can only be given when the patient has recovered consciousness, and the power of deglutition. Opium and narcotics are by no means indicated in puerperal convulsions.

The authors are opposed to the use of ether and chloroform as anæsthetics in convulsions. Baths or cold affusions on the head are means which may prove serviceable.—*Lond. Jour Med.*

On the use of Indian Hemp as an Oxytotic, or Promoter of Delivery. By DR. GRIGOR.—Since reading Dr. A. Christison's seven cases, conducted at the Maternity Hospital of Edinburgh, I have used the Tinct. Cannabis Indic. (24 grs. ext. to $\frac{3}{4}$ j.) in sixteen cases. In nine of these, though given to the extent of 3 ij. ss. in separate doses of 25 and 35 drops at a time,—in some in quick succession, in others at longer intervals,—I could not perceive any increased uterine action, nor the slightest physiological change in any one way during labor or afterwards, with the exception of one instance of sleep (much required at the time) in a lady, far from strong, confined of her third child, and much exhausted by inefficient throes, in whom the third 3 ss. dose completely arrested the pains and induced sleep, which continued for an hour, when she awakened refreshed. Labor then set in in earnest, chloroform was given, and the child was speedily born. These nine cases made good recoveries.

In the seven cases in which the tincture of hemp succeeded so well with me, five were cases of first confinement, of satisfactory though

very slow labor, and phlegmatic temperament. I have noticed the contractions acquire great increase of strength and frequency immediately on swallowing the drug, and have seen four or five minutes elapse ere the effect ensued; and if none was induced within the latter space of time, I have not observed its effects at all afterwards, notwithstanding repeated doses. In these few cases, I had opportunities of giving it from the time when the os uteri would admit the point of my finger till the expulsion of the child. Judging from experience, I believe that, in appropriate cases for the use of this stimulant, and when effectual, it is capable of bringing the labor to a happy conclusion considerably within a half of the time that would otherwise have been required, thus saving protracted suffering to the patient, and the time of the practitioner.

I have not observed it to possess any anæsthetic effects. I have used it in two cases along with the inhalation of chloroform, and I did not observe that that agent interfered in any way with its action.

When the effects of the hemp were subsiding, I have been able to recall and keep up "the good pains" by the addition of ten drops given from time to time. I consider the expulsive action of the cannabis to be stronger than that of the ergot, but less certain in its effect; and it has the advantage over the ergot, of usefulness in the early stage of parturition. I believe that the previous ineffectual administration of the hemp does not interfere with the after-exhibition and full working of the ergot.

Such are my brief observations on the new and interesting use to which Bang, or the Hachisch of India, has been put. In the few cases in which I thought its administration safe, and not counter-indicated by malformation, etc., you have given the result of those in which this effect was, and was not, displayed. I cannot conclude these remarks without entering my dissent against the use of uterine medicinal stimuli in general, on account of the frequent difficulty of accurate conception of relative dimensions of parts, etc. Yet all obstetricians must acknowledge that, in many cases, such stimuli are indispensable; and to be possessed of one capable of so early application, is decidedly a matter of much importance. I would also notice that, in labor, whether the cannabis shows its peculiar effect on the uterine contractions or not, there seems, as in tetanus, etc., to be a very great tolerance of the drug—nor have unpleasant consequences, so far as I have seen, appeared afterwards; and, whilst it is acknowledged as a powerful controller of inordinate muscular spasm, it is equally, in many cases, a powerful stimulant of the uterine muscular fibre in labor, if not in the unimpregnated state."—*Monthly Jour. of Med. Sci.*

SURGERY AND SURGICAL PATHOLOGY.

Are Primary or Secondary Amputations to be preferred? By MR. G. J. GUTHRIE.—When the wound of an extremity is of so serious a nature as to preclude all hope of saving it by scientific treatment, that limb should be amputated as soon as possible.

An amputation of the upper extremity may almost always be done from the shoulder-joint downwards, without much risk to life, and, when necessary, the sooner it is done the better.

An amputation of any part of the lower extremity below the knee downwards may be done forthwith, with nearly an equal chance of freedom from any immediate danger, as of the upper extremity at or near the shoulder-joint.

It is otherwise with amputations above the middle of the thigh, and up to the hip-joint. They are always attended by considerable danger.

There can be no doubt that if the knife of the surgeon could in all cases follow the ball of the enemy, or the wheel of a railway carriage, and make a clean good stump instead of leaving a contused and ragged wound, it would be greatly to the advantage of the sufferer; but as this cannot be, and an approach to it even can rarely take place, the question naturally recurs: At what distance of time after the receipt of the injury or accident can the operation be performed most advantageously for the patient?

In order to answer this question distinctly, it should be considered with reference to two distinct states of injury:

1st. When injuries require amputation of the arm below the shoulder joint, or of the leg below the knee, these operations may be done at any time, from the moment of infliction until the expiration of twelve or twenty-four hours, without any detriment being sustained by the sufferer with regard to his recovery; although every one, under such circumstances, must be desirous to have the operation over. The surgeon having several equally serious cases of injury of the head or trunk brought to him at the same time as too requiring amputation, may defer them more safely perhaps than the assistance he is also called upon to give to the other cases, the postponement of which may be attended with greater danger.

2d. This state embraces those great injuries, in which the shoulder is carried away with some injury to the trunk, or the thigh is torn off at or above its middle, rendering an amputation of the upper third or at the hip-joint necessary; and it is this or nearly this state which alone implies a doubt as to the propriety of immediate amputation, and demands further investigation. It is the state to which your attention is earnestly drawn for future observation.

It has been implied, if not actually maintained, that a man could have his thigh carried away by a cannon-shot without being fully aware of it, or, if aware of it, that it did not cause much alarm—in fact, that it did not materially signify, as to his apprehensions, whether the ball took off his limb or the tail of his coat, or only grazed his breeches. An instance of this kind has not fallen under my observation.

A surgeon on a field of battle can rarely have a patient brought to him, requiring amputation, under less time than from a quarter to half an hour; a surgeon in a ship may see his patient in less than five minutes after the receipt of the injury; and to the surgeons of

the navy we must hereafter defer for their testimony as to the absence or presence of any constitutional alarm and shock; and if they occur, to what degree do they follow immediately after the receipt of such injury? The question must not be incumbered and mystified by a reference to all sorts of amputations after all sorts of injuries, but to the one especial injury—viz. that of the *upper half of the thigh*.

My experience, which may be erroneous, like every thing human, has taught me, that when a thigh is torn, or nearly torn off, by a cannon-shot, there is always more or less loss of blood, suddenly discharged, and which soon ceases in death, or in a state approaching to syncope. When the great artery is torn, this fainting saves life, for an artery of the magnitude of the common femoral does not close its canal by retracting and contracting, as a smaller vessel does; it can only diminish it; and the formation of an external coagulum is necessary to preserve life, which the shock, alarm, and fainting, by taking off the force of the circulation, aid in forming; and without which the patient would bleed to death. An amputation, in this state of extreme depression, might destroy life.

If the cannon-shot, or other instrument capable of crushing the upper part of the thigh, should not divide the principal artery, and the sufferer should not bleed, it is possible he may be in the state alluded to, in which the patient, for he may not be called a sufferer, is said to be just as composed as if he had only lost a portion of his breeches. Nevertheless, few have seen a man lose even a piece of his breeches by a cannon-shot, without perceiving that he was indisputably frightened.

Whilst some persons, under the loss of a limb high up, are reduced to a state of syncope, or nearly approaching to it, which renders them almost, or even entirely, speechless; others suffer extreme pain, and earnestly entreat assistance, under which circumstances, amputation should be performed forthwith. In the former, the administration of stimulants may render the operation less immediately dangerous.

Chloroform, or other similar remedies, may produce an effect in such cases yet unknown. Its careful administration may not destroy the ebbing powers of life, and may render an amputation practicable, which could not otherwise be performed without the greatest danger. It may be otherwise; the point, however, is to be ascertained, although in all cases of great suffering its use should be unhesitatingly adopted.

When the sufferer is brought to the surgeon at the end of half an hour, having lost a limb below the thigh or shoulder, by a cannon-shot, he will often be found in a state of such great depression as to be likely to be destroyed by the infliction of a serious and painful operation like amputation. This has occurred to me so often as to induce me to recommend delay for five, six, or even eight hours, if the unfortunate person did not suffer much, and appeared likely to be revived by the proper use of stimulants.

This recommendation originated from the fact, that as one seriously wounded man has as much claim as another to the attention of the surgeon, all could not be attended to at the same time; and the success following the deferred cases of amputation was as great, if not greater, than in those on which the operation was more immediately performed.

The advantageous results of *primary* amputations, or those done within the first twenty-four or at most forty-eight hours, over *secondary* amputations, or those done at the end of several days, or three or four weeks, has been so firmly and fully established as to admit no longer of dispute.

When an amputation is deferred to the secondary period, a joint is often lost. A leg which might have been cut off below the knee in the first instance, is frequently obliged to be removed above the knee when done in the second.

In the secondary period after great injuries, the areolar and muscular textures near the part injured are often unhealthy, the bones are in many instances inflamed internally, and their periosteal membranes deposit on the surrounding parts so much new ossific matter as frequently to envelope in a few days the ligatures on the vessels, and render them immovable, necrosis of the extremity of the bone following as a necessary consequence, protracting the cure for months.

Sloughing of the stump, accompanied by inflammation of the vein or veins leading to the cava, frequently take place. This state of stump is often followed by purulent deposits in and upon the different viscera, and principally in the cavities of the chest. Where febrile diseases are endemic, they often prevail; the constitutional irritation is great; the stumps do not unite, or open out if apparently united, and slough, and frequently after a few days implicate the veins.—*Amer. Jour. of the Medical Sciences.*

Dislocation of the Acromial end of the Clavicle.—Thomas Jenkins, aged 21, admitted August 3, 1852, under the care of Mr. Green. An hour before admission he was standing in a narrow way, when a coal cart passed by, the wheel coming in contact with the outer part of the left shoulder, and pressing him against the wall. On examination the nature of the injury was at once evident, for the acromial end of the clavicle was plainly seen resting against the spine of the scapula, and under cover of the trapezius muscle. The part of the spine of the scapula where the clavicle was resting on, was nearly two inches from that part of the acromial process of the scapula to which it is normally articulated. Shortening of the distance between the neck and the shoulder was well marked. In consequence of the support of the clavicle being gone, the shoulder came forward so as to give the impression that there was some displacement of the head of the humerus. There was some contusion of the soft parts at the outer and posterior aspect of the shoulder-joint. The clavicle was almost brought back to its normal position, by keeping the shoulders back, and raising the arm. A figure-of-eight bandage was therefore applied,

in the same manner as for fractured clavicle; and the arm was raised by a bandage under the elbow, and carried over the opposite shoulder. This treatment was continued up to August 21st, when he was discharged. There was but little deformity when he left the infirmary.

This was an extreme case of displacement, for in most instances the clavicle is dislocated upwards on the acromion. There was the following circumstance to be noticed in this man: On the other side, the clavicle and the acromion process were not on the same plane, so that on the application of great force, this condition of articulation would, I think, rather tend to dislocation; whereas if the two bones had been on the same plane, the clavicle would have been most likely fractured.—*Prov. Jour.*

Supposed Aneurism of Bone. By M. PAMARD.—M. Pamard, of Avignon, lately submitted to the Academy of Medicine of Paris, an instructive case of supposed aneurism of the fibula, and death, alleged to be from chloroform, a week after the operation. The patient was a young soldier, twenty-seven years of age, who, while engaged in gymnastic exercises, felt a sudden pain in the leg, and was obliged to desist. A tumor, about the size of half an egg, was now noticed over the left fibula. Various means were used for some time to disperse the swelling, but to no purpose. The man was at last transferred to the hospital of Avignon, when the tumor had reached a very large size. It was elastic, seemingly surrounded by a thin, osseous shell, closely attached to the fibula, but unadherent to the tibia. There was no fluctuation, no *bruit de soufflet*, and no pulsation. M. Pamard had recourse to extirpation whilst the patient was under the influence of chloroform, administered with an oil-skin bag, in which were several little sponges, moistened with chloroform. As the patient was not affected by the drachm of chloroform which had been poured into the bag, another drachm was added, which sent him to sleep. The tumor was opened before it was finally removed, and found distended with a considerable quantity of clots, evidently of very old formation. M. Pamard then thought that the tumor was really an aneurism of bone.

The patient fell, during the operation, into a state of syncope, though there had been very little hemorrhage; ammonia was used, and as soon as the leg was dressed he was taken to bed, where warm flannel was placed upon the limbs and the præcordial region. No reaction ever took place, the pulse regained no force, and the man remained in a passively languid state for nine days, and died, in spite of a great variety of stimulants which were used to rouse the system.

On a *post-mortem* examination, the affected leg was found completely sphacelated, and the tissues infiltrated up to the thigh, but no attempt at healthy inflammation could be perceived. The tumor was springing from the fibula, surrounded by a thin, osseous envelope; and where this was deficient it was replaced by a fibrous tissue, re-

sembling the periosteum. The interior of the tumor was filled by a considerable mass of solid clots. It was found impossible to trace the vascular connection between the cavity of the tumor and the bone. M. Pamard attributes the gangrene of the limb to the complete state of prostration into which the patient fell immediately after the operation, and thinks that the inhalations of chloroform had been mainly instrumental in that result.

Three surgeons of eminence, viz., M. Roux, M. Velpeau, and M. Cloquet took part in the discussion to which this communication gave rise. M. Roux stated that deaths of this kind had taken place before the use of anæsthetic agents was introduced, and that he doubted very much that chloroform was to blame in this instance. He had, on the other hand, several years ago described this kind of aneurism of bone, and was of opinion that the ligature of the main artery of the limb might have been resorted to, instead of extirpation.

M. Velpeau thought the tumor was more of a cancerous than of an aneurismal nature; he had seen several such growths, and would class them among the fungus hæmatodes variety. As to the chloroform, he quite agreed with M. Roux.

M. Cloquet concurred with M. Velpeau as to the nature of the tumor, but thought the chloroform very probably was the cause of death.

It is plain that the tumor in question did not present any of the symptoms of aneurism of bone, as described by Scarpa; nor will the term of fungus hæmatodes, as applied in this country, agree with the growth and appearance of the swelling. It would, with English surgeons, probably be ranked among encephaloid growths broken down by hemorrhage. As to the effects of chloroform, opinions will probably be divided; but as there was previous good health, and little hemorrhage, one might be inclined to look to the chloroform for the fatal results of the operation.—*Lancet*.

PART FOURTH.

AMERICAN MEDICAL RETROSPECT.

SURGERY.

Case of Complete Removal of the Clavicle. By A. J. WEDDERBURN, M. D., Prof. of Anatomy in the University of Louisiana.—Michael Foggerty, aged 21 years, a laborer, was admitted into the wards of the Charity Hospital on the 21st of January, 1852, with caries of the clavicle, so extensive as to require its entire removal, by disarticulation at both extremities. The operation was made whilst the subject was under the influence of chloroform.

Operation.—An incision was made down to the bone over its entire length, and sufficiently far beyond its articulating points, to enable the disarticulation to be effected. The soft parts attached to the upper surface and the anterior border of the bone, were separated—next the separation from the acromion effected—the dissection was then continued close to the bone beneath, whilst the parts were kept on the stretch, by elevating the bone from the point just indicated. During the dissection the bone broke, from its diseased condition, about one and a half inches from its sternal articulation, which rendered the dissection connected with this portion of the bone more tedious than it would have been, had there been a sufficient length of bone left to have given a purchase. For the removal of such a diseased part as this, there can be no established mode of operation. Circumstances must always govern. Caution and a thorough knowledge of the region, is all that is necessary to make such operations simple and easy. The result of this operation was perfectly successful—recovery was rapid, and the case was discharged cured, towards the last of April, in something less than three months after the operation. When the case left the hospital, the use of the arm was perfect, the shoulder occupied its natural position; it was neither depressed, projected forward, or drawn nearer the sternum, and no other evidence presented that an operation had been made, than the cicatrix. He was discharged on the 8th of April.

Treatment.—The cavity from which the bone was removed was filled with lint saturated with a solution of quinine, and kept in this condition for twenty-four hours. The next day the cut surface was brought together with adhesive plaster, over which was placed a compress of lint, wet with a solution of quinine, about 5 grains to the ounce of water. No other treatment was resorted to during the cure. The shock from the operation was so slight, that he was sitting up in twenty-four hours after the removal of the bone. The solution of quinine was chiefly used in this case for its prophylactic effects against erysipelas, which was prevailing in the hospital at the time.

The total removal of the collar-bone has been done but twice before in this country. By Dr. Valentine Mott, in its successful removal for osteosarcoma of the left clavicle, in 1828, and also, by Dr. Warren, in 1833. In Europe, it has been made by Meyer and Roux, on account of caries; by Travers, "on a boy of ten years of age, who, in consequence of a fall probably broke the collar-bone, without rupturing the periosteum, had large effusions of blood within it, which formed a tumor, that by degrees involved and destroyed nearly the whole bone, except at its sternal end.—*N. O. Med. Reg.*

On the Remedial Virtues of Fel Bovinum, and the Diseases to which it is Applicable. By A. CUMMINGS, M. D.—I have used it somewhat extensively in my practice for a few years past, and in this article I design only to give the result of my own experience with it, and the conclusions to which I have arrived in relation to its real and comparative value. Before proceeding, however, I would remark that the *form* in which I have almost immediately exhibited it, is that of pills, made of the inspissated gall, rolled in flour, magnesia, Pulv. Glycyrrhiza, or some other fine powder, to render them of a suitable consistency. The gall may be evaporated in shallow basins, in an oven, or in the sun, until it become sufficiently firm to form into pills as above. This, in my opinion, is far the best method. It may be given in its liquid form, but it is less agreeable to the patient, and if not mixed with proof spirits, will soon become unfit for use. The medical properties of this agent, so far as my observation goes, are *laxative, alterative, and slightly tonic*. Its most valuable agency is exerted upon the stomach and liver. It seems to combine, in a remarkable degree, the three properties named above, and for many diseases to which the chylopoietic viscera are liable, I have found it a most excellent and valuable remedy. I proceed now to notice its application as a remedial agent in disease.

1st. *Obstinate Constipation.*—I am well aware that this is much oftener a *symptom* of disease, than disease *per se*; but I notice it in this place in order to speak of it in that form so common to those engaged in sedentary and confined occupations, and especially of females in large cities, amongst whom, for want of proper exercise and care, constipation is so prevalent, and detrimental. In cases of this description, I have seldom, if ever, been disappointed in obtaining relief by the use of the agent under consideration. The hardened,

compact, clay-colored feces, so common in cases where there is more or less obstruction of the liver, are, by the use of the gall, broken down in the intestines, and rendered so friable as to be easily discharged. This result is procured, not only by the combination of the gall with the hardened concretions, rendering them soft and un-irritating, but also by removing the obstruction, and permitting the natural flow of bile from the gall-bladder into the intestines. Thus it answers, in this respect, a two-fold purpose. Any one who doubts the efficacy of this remedy, by pouring a few drops of fresh gall upon hard clay-colored feces, and observing how soon the mass becomes liquid, cannot fail to be convinced. It imparts a healthy tone to the bowels, and promotes the natural secretions which may become impaired.

2d. In *bilious diseases*, arising from a torpid action of the hepatic function, the gall is an excellent remedy. It seems to act as a stimulant to the liver, and promote the secretion of the bile, and also to cause it to flow freely into the bowels, and thus accomplish its normal functions in the animal economy.

3d. In *Jaundice*, you will find that the exhibition of gall, if continued sufficiently long, even in small doses, will not fail to accomplish a desirable and satisfactory purpose. I could relate the history of many cases in my own practice, in which there was every symptom of this disease, where the gall has acted in the most satisfactory manner. As a stimulant to the liver, I generally prefer it to blue pill or mercury in any form, though there may be chronic diseases in which the mercury or some other alterative would be preferable. Whoever, at least, will thoroughly test the powers of this agent, I am confident, will find that I have not exaggerated its value. At least I am willing to abide by the judgment of others who may test it, as to the truth of my assertions. It may be necessary to continue the exhibition of this remedy for some length of time in severe cases of jaundice, but it is perfectly harmless, and moreover it may be used in those cases in which mercury cannot be administered, on account of the prejudice of patients or their friends against it, or of any idiosyncrasy of constitution where its use may be interdicted. At least it is a most valuable auxiliary.

4th. In *Dyspepsia*, also, I have in many cases seen the most gratifying results from the use of this remedy. It seems to impart a good tone to the stomach, and by its laxative effects upon the bowels, as well as by its soothing the irritated mucous surfaces of the stomach, proves, in my hands, at least, an excellent remedy. It leaves the influence of a mild tonic bitter on the stomach, not sufficient, however, to produce pain, and its laxative effects in dyspepsia cannot be but beneficial, for, in most cases in this disease, the bowels are torpid, and not unfrequently obstinately constipated. As a remedy also, collaterally, in

5th. *Hemorrhoids and Prolapsus Ani*, the gall is justly entitled to our consideration and confidence. If it has no direct or specific influence in removing these forms of disease, it is at least one of the

best laxatives in the general torpor of the bowels which accompanies them, since it not only evacuates, but soothes the bowels, and does not produce the irritation in piles and prolapsus ani that most other articles of the class do. But I am also inclined, from my experience with the article, to believe that it exerts a very favorable influence, at least, in the cure of these troublesome and painful affections. At least it justly merits a fair trial.

6th. In *Bilious and Intermittent Fevers*, the gall cannot but exert a favorable influence, since its office is not only to act as an alterative, and rouse the liver to its wonted action, but also to carry off from the bowels the superabundant bile, and to give tone to the chylopoietic system. In a word, in all those forms of disease (and they are many), arising from torpor of the hepatic system, I believe that there are few medicines that will give equal satisfaction with the one under consideration, and it is certain that no remedy is more safe in its administration and effects.

One more tormenting and dreaded effect arising from bilious derangement, in which the gall acts in a very favorable manner, I had almost forgotten to mention.

7th. *Sick Headache*, so called, though not, strictly speaking, a disease, is a sympathetic, symptomatic affection, of very frequent occurrence, and always excruciating, and dreaded by those who are subject to it periodically, or occasionally. As it arises from a bilious state of the stomach, the gall, given in small doses, and as frequently as is necessary, seldom fails to mitigate the symptoms, or entirely to relieve, or prevent its accession. It should be given in periodical cases for a season of at least a day or two before the anticipated attack.

8th. In *Typhus and Typhoid Fevers*, it is an excellent laxative, where strong cathartics are not required, and will be found worthy of confidence, whenever a remedy of the class seems to be indicated. Also in the low forms of

9th. *Nervous and Continued Fevers*, no better laxative, in my judgment, can be found, since in those cases strong cathartics are almost invariably contra-indicated. But I need not particularize further, since I believe enough has been said to give my ideas in relation to the class of cases in which this remedy is indicated; and as I cannot expect to gain the confidence of practitioners without their first giving the article in question a fair and impartial trial, I have perhaps already written too much. I am confident, however, that those who may make a fair trial of it, will not accuse me of exaggeration, for I have endeavored candidly to give the value of the article as it has proved itself in my own practice, and not from theory deduced from the natural properties of the medicine. I have said it is necessary, not unfrequently, to continue the medicine for some length of time, in obstinate cases especially. But it is harmless and safe, and will act well in any constitution, and is contra-indicated by no form of idiosyncrasy. The dose of the inspissated gall in the form of pills, or otherwise, is from five to ten grains or more, re-

peated every two or three hours, for a cathartic, and less for a mere laxative effect. It may be given in sufficient doses, at any time, with perfect safety to adults or children.—*Boston Medical and Surgical Journal*.

On the use of Ice as a local Anæsthetic. By W. A. BERRY, M.D., of Washington, D. C.—I propose to make known to the many readers of your valuable Journal, the application of a new local anæsthetic agent, which probably is not familiar to a large majority of them. This agent is applicable to but a very limited part of the frame, but its efficiency is such as to cause its use in all like cases. I refer to the local anæsthetic effect of ice in the removal of the nails of the toes or fingers. This most painful operation is disarmed of all its terrors by this simple means, and the patient witnesses it with as much composure as his operator. The agent was first made use of in the wards of M. Velpeau, during the past summer, in Paris, by one of his internes, and afterwards successfully applied by himself in a number of cases. The ice is powdered finely and mixed with a sufficient quantity of salt; next enveloped in a thin cloth, and the two phalanges of the great toe or thumb enveloped in it; the application should not be continued over five or six minutes, this time being sufficient to produce the most perfect anæsthesia. M. Velpeau proceeds with the operation in the following manner: Immediately upon removing the ice, the nail is divided in its length with a common-sized bistoury from its free extremity to the root, then seizing each half successively with a strong forceps, it is removed with a moderate *jerk*. The frequent necessity for the performance of this operation, and the great pain attending it when removed under other circumstances, is sufficient to cause its universal application by the Profession. M. Velpeau directs the application of compresses of cold water to the part during the first twenty-four hours; and the simple cerate dressing for a few days is all that is required.

It may be objected that the reaction under the application is such as to prevent its use; I will simply say that of the six patients that I saw operated upon by M. Velpeau, no such accident occurred to any one of them; and to the one case in which we applied it but a few days since (and which has suggested this communication), we have reason to believe that the agent is free from any unhappy results.

The simplicity and efficacy of this piece of minor surgery, and the so frequent necessity of some surgical interference in these cases, has induced me to send you this communication.—*Med. Examiner*.

On the Treatment of Hemorrhage from the Umbilicus in New-Born Infants. By FRANCIS MINOT, M. D.—The treatment consisted in various astringent, styptic, and caustic applications to the navel, and the internal exhibition of substances supposed to act specifically on the liver and on the blood. Among the former class were lunar

caustic, acetate of lead, tannic acid, alum, matico, the actual cautery, &c.; also plaster of Paris, pressure, and the ligature. The latter included mercurials, taraxacum, sulphate of soda, cathartics, &c.

The treatment employed in those cases in which the hemorrhage was permanently arrested, was principally the following:

Compression in	3 cases.
Ligature in	3 "
Collodion in	1 case.
Plaster of Paris in	1 "
Scrapings of sole leather in	1 "
Nitrate of silver in	1 "

But in three of these cases the patients died, eventually, from exhaustion, or diseases evidently caused by the feeble condition of the child.

It is recommended by some writers to cut down upon the bleeding vessel and tie it. This must be a very difficult, if not impracticable operation, even in the small number of cases in which the bleeding comes from a single vessel. I think the ligature *en masse* is easier, safer, and more effectual. The ligature, however, will succeed in a very small number of cases, unless the diathesis upon which the malady depends be corrected. The same may be said of styptic and caustic applications, which in four cases actually appeared to increase the hemorrhage.

The internal use of astringents and tonics, appears to me to have been too much neglected in the treatment of these cases. I find but a single instance of their employment among thirty-three cases whose treatment is reported. We employ such remedies in purpura hemorrhagica, in scurvy, and other hemorrhagic diseases of adults; why should they be omitted in a disease so similar in its character in infants? The instance referred to was communicated to me by Dr. S. S. Whipple. The child, a male, was to all appearance perfectly sound, and weighed between nine and ten pounds. It was born on the 10th of May last, of robust parents, and after a perfectly natural labor. Thirty hours after birth, Dr. W. was called to it, and found blood issuing from around the umbilicus, rather by exudation than from any disturbance to the integrity of the parts. It was not disposed to coagulate, and was compared to cranberry juice in consistency and color. It was immediately checked by a solution of the sulphate of copper. At the end of twenty-four hours, the hemorrhage returned, more profuse, with extreme prostration. The action of the heart was imperceptible, and the respiration was accompanied by a feeble moaning. The bleeding was again arrested by styptic applications, and tincture of the muriate of iron, with brandy, was given in as large doses as the patient could bear. He soon revived, with a healthy appearance, and commenced taking the breast. The discharges from the bowels and bladder were natural, and he continued to improve in strength and appearance for four days, during which time the cord was detached without hemorrhage. On the ninth day

(second from the separation of the cord), the bleeding commenced again, and he died on the tenth. In this connection, I will also mention an interesting case lately reported to the Society by Dr. W. E. Coale; there was no bleeding from the navel, and, therefore, the case is not included in my tables; it is evidently identical in its nature with the others: A female child began to vomit blood the day after its birth. The next day she also passed considerable quantities by stool, so that two towels were saturated with it. One drop of the aromatic sulphuric acid was given this day at 11 A. M., and continued every two hours. On the third day the hemorrhage had diminished; on the fourth it was still less; but the child was pale and very feeble. A quarter of a grain of sulphate of iron in solution was now substituted for the acid. On the fifth day, the symptoms improving, the medicine was ordered every four hours; and the intervals being gradually lengthened, it was left off on the seventh day. The child recovered perfectly. So far as two cases teach anything, these afford some encouragement, and the use of the mineral acids, or other astringents and tonics should always be tried.

As to local treatment, we have seen that the ligature and pressure were each successful in three cases, and that caustic and styptic applications generally failed. The most that can be hoped from local application is a temporary arrest of the bleeding until the condition of the blood can be improved. The ligature appears to me the most likely to effect this, and the sooner it is employed the better, since every drop of blood is of importance in such young subjects. I believe the best mode of employing it is to transfix the umbilicus by two needles at right angles, and wind the thread tightly underneath them.

It is important to sustain the strength of the patient by nourishing diet and stimulants; the apartment should be cool, the clothing light, and every effort made to prevent the child from crying.—*American Journal of Medical Science.*

MISCELLANEA.

New Work on Materia Medica.—We have received a prospectus issued by Drs. Church and Seeger, of Springfield, Mass., who propose to issue in monthly parts "one of the most extensive and complete systems of *Materia Medica* extant, and in such a manner that it can be bound in separate volumes, with an index at its close," from the pen of Dr. William Tully, late Professor in the Medical Department of Yale College. We have long regarded Dr. Tully as one of the most crudite medical scholars of the age;—one whose rich experience, extending as it does over a period of more than forty years, ought not to be lost to the profession. We therefore hail this contemplated publication with great pleasure. We feel assured that the reputation of American medical literature will be greatly increased by this production, and that for this, the least of considerations, it ought and must be supported by the profession at large.

PROF. LEE'S *Translation of Orfila on Nicotine*. With this number is completed the classical translation of this masterpiece of French medico-legal research. Those of our readers who have bestowed upon this monograph that attention which its great merits should command, can but feel thankful (as we most assuredly do) to Dr. Lee for his translation of this excellent paper—a model paper in toxicological science.

New-York Medical Times.—With the October number this excellent journal changes editorship and proprietorship. We welcome Dr. Bulkley's introduction into the editorial ranks, with a hearty wish that he may continue for a long time to honor it with his distinguished attainments.

New-York Medical College.—A new professional chair, we understand, has been added to the faculty of this college, that of Medical Jurisprudence, and Joel Parker, LL. D., has been elected to fill it.

College of Physicians and Surgeons.—Since our last issue Dr. John A. Swett has been appointed lecturer on Clinical Medicine in this college. This we look upon as a happy appointment. Dr. Swett is very justly esteemed a successful teacher and an able lecturer.

Miami Medical College.—By a circular advertisement we learn that another medical college has been organized under this name, in Cincinnati, Ohio. Among its faculty we notice the names of men of talent and sterling acquirements.

New-York Ophthalmic Hospital.—In April last an institution in this city, with the above name, was incorporated. Its President is the Hon. CALEB S. WOODHULL, and its medical officers, DAVID L. ROGERS, M. D., and MARK STEPHENSON, M. D. The institution is now in full operation; and by its mode of organization, is calculated to accomplish much good.

Professor Valentine Mott.—We take much pleasure in announcing to our readers the fact that upon our distinguished Surgeon has recently been conferred the degree of Honorary Fellow, of the King's and Queen's College of Physicians of Ireland. This College was established in 1660. Dr. MOTT is the only American upon whom the degree has ever been conferred.

Medicine Department of Yale College.—The chair of Theory and Practice of Medicine in this institution, has been filled by the appointment of Dr. Worthington Hooker, to the same. We congratulate the school on this appointment.

American Medical Association.—At a meeting of the Association held at Richmond, Va., May, 1852, the undersigned were appointed a committee to receive voluntary communications on medical subjects, and to award two prizes of \$100 each to the authors of the best two essays.

Each communication must be accompanied by a sealed packet, containing the name of the author, which will be opened only in the

case of the successful competitors. Unsuccessful communications will be returned on application after June 1st, 1853.

Communications must be addressed, post-paid, to the chairman of the committee, Dr. Joseph M. Smith, 56 Bleecker st., New-York, on or before the 20th of March, 1853. Joseph M. Smith, M. D., John A. Swett, M. D., W. Parker, M. D., Gurdon Buck, M. D., Alfred C. Post, M. D.

The Sixth Annual Meeting of this Association will be held at the City of New-York, on Tuesday, May 3d, 1853.

The Secretaries of all Societies, and other bodies entitled to representation in this Association, are requested to forward to the undersigned correct lists of their respective delegations as soon as they may be appointed; and it is desired by the Committee of Arrangements that these appointments be made at as early a period as possible.

The following is an extract from Article II. of the Constitution:

"Each local society shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for each additional fraction of more than half this number. The faculty of every regularly constituted medical college, or chartered school of medicine, shall have the privilege of sending two delegates. The professional staff of every chartered or municipal hospital, containing a hundred inmates or more, shall have the privilege of sending two delegates; and every other permanently organized medical institution of good standing, shall have the privilege of sending one delegate.

EDWARD L. BEADLE,

*One of the Secretaries of the Amer. Med. Assoc.,
42 Bleecker street, New-York.*

The medical press of the United States is respectfully requested to copy the above notices.

OBITUARY.

DEATH OF DR. JOEL A. WING. At Hartford, Con., in September last, Dr. Joel A. Wing, of Albany.

DEATH OF DR. WILLIAM ANDERSON, in this city, on the 27th of September, aged 60 years. Dr. Anderson was a Graduate of Edinburgh, and a Licentiate of the Royal College of Surgeons of Edinburgh. In 1820 he emigrated to this country, and settled in this city. In 1822, while a lecturer on Surgical Anatomy, he published the first part of a quarto volume, of a *System of Surgical Anatomy, Illustrated with Copperplate Engravings.*

DEATH OF DR. ÆNEAS MONSON, in New Haven, Con., on the 22d of Aug., of dysentery, aged 87 years. Dr. Monson, at the time of his death, was the oldest alumnus of Yale College, being graduated in 1780.

INDEX TO VOL. IX.

NEW SERIES.

A		Brooklyn City Hospital, notice of		298
Abscess of joints, treatment of	50	Brown on traumatic aneurism	.	362
“ testicle	103	Brown on ovarian dropsy	.	261
Alcock on injuries of joints	46	Bright's disease and puerperal		
Amputation at hip-joint	184	convulsions	.	418
“ knee-joint	307-330	Buboes, treatment of	.	57
“ anæsthetics in	288	C		
“ spontaneous		California, climate and diseases of	.	280
utero	346-349	Cancer of uterus, Lee on	.	266
Amputation, Guthrie, on	424	“ Simon on	.	395
American Medical Association,		Carnochan, on elephantiasis Ara-		
proceedings of	145	bum	.	163
American Medical Association,		Carcinoma of eyelid	.	205
notices of	435	Chloroform, compound tincture		
Anæsthesia, death during	275	of	.	150
“ in amputations	288	Chloroform, death from	.	275
Aneurism of aorta, case of	130	“ in gunshot wounds	.	288
“ arteria innominata	254	Cholera, statistics of	.	244
“ dissecting, cases of	141	“ in England, report on	.	244
“ traumatic, case of	362	“ influence of sex on mor-		
“ Holland on diagno-		talidity of	.	245
sis of	254	Cholera, mineral acids in	.	293
Aneurism of posterior tibial artery	362	Chancres with phymosis	.	55
Aneurism of bone, case of	428	Chapin, death of	.	298
Anderson, death of	438	Clavicle, dislocation of	.	427
Aorta, aneurism of	130	“ complete removal of	.	430
Arnica montana, properties of	268	Coup de soleil, Lidell on	.	91
“ formulæ for	271	“ Kilbourne on	.	274
Ascites, injections in	260	Cooper's surgery, notice of	.	250
Ayres on tracheotomy in croup	69	Cod-liver oil in phthisis	.	135
B		Cranium, fracture of	.	259
Bartlett on fevers, notice of	143	Croup, tracheotomy in	.	69
Bernard's and Huett's operative		“ tincture of chloroform in	.	150
surgery	413	Cummings on fel bovinum	.	431
Berry on ice as a local anæsthetic	434	D		
Blood in disease, Simon on	389	Dalrymple, death of	.	272
Bladder, injuries of	103	Delivery, sudden death after	.	267
“ rupture of	105-106-107-108	Diabetes, pathology of	.	287
“ “ remarks on	110	Diarrhœa, Lidell on	.	88
Blake on diseases of California	280	Dissecting wound, case of	.	209
Blepharoplastic operation	205	Dundas's sketches of Brazil	.	411
Bone, aneurism of	428	“ on quinine in fever	.	412
Boinet on iodine injections	260			

Duclos and Bouteillier on puerperal convulsions	422
Dysentery, Lidell on	78
“ treatment of	81
Dyspepsia, fel bovinum in	432

E

Eczema impetiginodes in children	258
Editorial changes, notice of	296
Elephantiasis Arabum, case of	163
Erysipelas, Blake on	282
Ether, death from	277
“ in gunshot wounds	289
Eve's cases of lythotomy	292
Evers on quinine in fever	421
Excretion, pathology of	403
Eyelid, carcinoma of	205

F

Fagel on quinine in fever	294
Femoral artery, ligature of	163
Fel bovinum, remedial virtues of	430
Fever typhus, Upham on	9
“ Kneeland on	169
“ Flint on	413
Flint on continued fever	413
Folts on death during anæsthesia	275
Forget on sudden death after delivery	267
Fractures, spontaneous cases of	95
Frick on pathology of diabetes	287

G

Gangrene of lungs	127
Gastritis, acute, cases of	211
Graves on gutta percha in skin diseases	417
Green on polypi of larynx	253
Grigor on Indian hemp	423
Gunshot wounds, remarks on	288
Gutta percha in skin diseases	417
Guthrie on amputations	424

H

Hamilton's case of neuroma	278
Haynes' case of death from ether	277
Headache, fel bovinum in	433
Heart, functional affections of	256
Hemorrhoids, fel bovinum in	432
Herpes of vulva	264
Hester on treatment of cholera	293
Hernia, injections in	290
Hip-joint, statistics of amputation at	184
Holland on aneurisms	254
Hurxthal on removal of pessary	152
Hugnier on disease of follicles of vulva	263
Hypertrophy of spleen	94

I

Iliac artery, ligature of	151
Injections in ascites	260
“ hernia	290
Intermittent fever, arnica in	269
“ fel bovinum in	433
Indian hemp, Grigor on	423
Innominata, aneurism of	254
Iodine injection in ascites	260

J

Jaundice, fel bovinum in	432
Journal of Pharmacy, notice of	152
Joints, amputation at	184

K

Kempen on early menstruation	280
Kilbourne's case of injury from lightning	273
Xilbourne on coup de soleil	274
Knee-joint, suppurative inflammation of	40
Knee-joint, amputation at	307
“ “ remarks	310
Knee-joint, amputation at, cases of	313
Kneeland on typhus fever	169

L

Laryngotomy, case of	290
Lauzer on arnica montana	268
Lee on cancer of uterus	266
“ lemon juice in rheumatism	76
“ translation on nicotine	112
“ case of fracture of skull	259
Lente's medical observations	51-354
Lidell on diseases of Panama	78
“ diarrhœa	88
“ acute gastritis	211
Litzmann on puerperal convulsions	418
Lightning, injury from	273
Lungs, gangrene of	127
Lymphangioritis	93
Lythotomy, summary of cases of	292

M

Manganese, an adjuvant to iron	255
“ formulæ for	257
Mauthner on eczema impetiginodes	258
Medical Association, proceedings of	145
Menstruation, early, case of	280
“ final cause of	415
Meigs' obstetrics, notice of	144

- Mier on blepharoplasty operation 205
 Mercury, remarks on in syphilis 60
 Medical Society of N. Y. State 294
 Miller's Surgery, notice of 143
 Minot on hemorrhage from umbilicus 434
 Midwifery, contributions to 330
 Monson, death of 438
 Morisseau on tumors in pregnancy 260
 Morbid poisons, Simon on 405
 Mott, Prof., notice of 438
- N
- Neligan on skin diseases 411
 Nervous system, disorders of 256
 Neuralgia, Lidell on 91
 Neuroma, pathology of 279
 " case of 278
 Nicotine, memoir on 112-219-369
 " chemical properties of 113
 " effects of on animals 115-378
 " medico-legal researches on 117-228-231
 Nicotine, salts of 381
 " questions relating to 382
- O
- Obituary notices 152-272-298
 Operative surgery, Smith's, notice of 408
 Operative surgery, Piper's, notice of 410
 Operative surgery, Bernard's and Huette's, notice of 413
 Orfila on nicotine 112-219-369
 Ovarian dropsy, new mode of treatment of 261
- P
- Panama, diseases of 78
 Parrish, death of 298
 Pamard on aneurism of bone 428
 Panaritium, Lidell on 92
 Paralytic affections 269
 Parker's surgical cases 95-307
 " on spontaneous fractures 96
 Petreguin on manganese 255
 Pericarditis, remarks on 138
 Pessary, injurious effects of 152
 Physicians' visiting list, notice of 414
 Phymosis with chancres 55
 Phthisis, remarks on 132
 Perrie's surgery, notice of 250
 Pierce on adulterated drugs 412
 Piper's operative surgery, notice of 410
- Placenta prævia, Purple on 330-335
 Pleurisy, remarks on 128
 Pond's case of rupture of bladder 105
 Porter on gunshot wounds 288
 Polypi of larynx 253
 Prolapsus of the umbilical cord, statistics of 347
 Pregnancy, tumors in 260
 Professorial changes 297
 Precocity, remarkable case of 280
 Puerperal convulsions 418
 " treatment of 422
 Purple on dissecting wound 209
 " rupture of the uterus 338
 " unavoidable hemorrhage 330-335
 Purple on prolapsus of umbilical cord 343
 Purple on spontaneous amputation in utero 346-349
- Q
- Quckett's histology, notice of 144
 Quinine in fever 294
- R
- Ramsbotham on menstruation 415
 Recamier, death of 272
 Review of Swett on the chest 125
 " Simon's pathology 388
 Rheumatism, lemon-juice in 76
 " Lidell on 92
 " Blake on 282
 Rogers, death of 298
 Rupture of the bladder, cases of 105
 " uterus, cases of 338
 " remarks on 340
 Rupture of the uterus, frequency of 340
 Rynd's case of rupture of the bladder 107
- S
- Scrofula, Simon on 400
 Scrotum, sloughing of 354
 Simon's pathology, review of 388
 Smith on amputation at hip-joint 184
 " operative surgery, notice of 408
 Spasms, arnica in 269
 Spencer, Dr., death of 152
 Spleen, hypertrophy of 94
 Spontaneous fractures, cases of 95
 " amputation 346-349
 Stone on inflammation of knee-joint 40
 Suppurative inflammation 40

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